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I.—Notes on Indian RHYNCHOTA: HETEROPTERA, No. 3.

By E. T. ATKINSON, B. A.

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Family PENTATOMIDÆ (*continued*).

Genus DALPADA (*continued*).

137. DALPADA TRIMACULATA, Westwood.

Pentatoma 3-maculata, Westw., Hope, Cat. Het. i, p. 41 (1837).

Dalpada angulicollis, Ellenr., Nat. Tijds. Ned. Ind. p. 142, f. 9 (1862); Walker, Cat. Het. i, p. 221 (1867).

Dalpada triguttata, Voll., Versl. Ak. Amst. Nat. (2) ii, p. 179 (1868).

Dalpada trimaculata, Dallas, List Hem. i, p. 184 (1851); Walker, l. c. p. 219 (1867); Stål, En. Hem. v. p. 44 (1876).

Piceous, punctured; a slender line on sides of pronotum, and a dorsal line with two large spots at basal angles of scutellum and its apex, whitish, posterior angles of pronotum prominulous, subacute: antennæ pale; body beneath luteous, sides broadly piceous (*Westw.*). Long, $14\frac{1}{2}$ mill.

Reported from Philippines, Java, Borneo, Assam (mihi).

138. DALPADA BULBIFERA, Walker.

Dalpada bulbifera, Walker, Cat. Het. i, p. 223 (1867).

Testaceous, nearly fusiform, thickly and somewhat roughly punctured; punctures brown; beneath luteous, with a black stripe on each

side : head lanceolate, as long as the pronotum, with three irregular black stripes, of which the median is forked between the eyes ; tylus extending a little beyond the juga ; eyes very prominent ; rostrum with a black tip, extending rather beyond the last coxæ : antennæ piceous, slender, much more than half the length of the body, first joint not extending to the front ; 2-3 joints with testaceous tips ; second a little longer than the third ; fourth much longer than the third ; and than the fifth, which is testaceous at the base : pronotum, scutellum and hemelytra partly and slightly clouded with brown ; pronotum with a transverse impression, in front of which there are four black spots ; posterior angles black, smooth, shining, globose : scutellum attenuated towards the base : pectus with a black patch on each side containing three testaceous spots : abdomen beneath with a furrow which extends to the posterior margin of the fourth segment, with a piceous apical patch, and with two black stripes which include testaceous lateral spots : legs long, setulose, femora black-speckled, tibiæ piceous towards the tips : membrane cinereous, with broad brown streaks between the veins. Narrower than *D. nodifera*, Walker, with which it agrees in the structure of the posterior angles of the pronotum (*Walker*). Long body, 15 mill.

Reported from N. India.

139. DALPADA BREVIVITTA, Walker.

Dalpada brevivitta, Walker, Cat. Het. i, p. 224 (1867).

Dingy lurid, elliptical, minutely punctured ; punctures black, which hue here and there forms patches ; beneath dull tawny : head a little shorter than the pronotum ; tylus not extending beyond the juga ; eyes very prominent : rostrum very slender, extending a little beyond the hind border of the first abdominal segment : antennæ very slender, much shorter than the body ; first joint not extending to the front of the head, full half the length of the second, which is a little shorter than the third ; fourth and fifth black, a little longer than the third ; fifth shorter than the fourth : pronotum with the usual transverse impression, between which and the posterior margin is a broad lurid stripe ; posterior angles slightly acute, not prominent : scutellum not extending beyond the posterior angles of the corium : legs rather long and slender ; tarsi and tips of the femora and of the tibiæ black : hemelytra with two blackish patches ; membrane cinereous, with a broad brown streak and an incomplete brown border. Like *D. tecta*, Walker, in structure, but is much darker beneath, and the sides of the pronotum are serrated anteriorly (*Walker*). Long, 15 mill.

Reported from Cachar (Assam).

140. DALPADA TECTA, Walker.

Dalpada tecta, Walker, Cat. Het. i, p. 224 (1867).

Pale testaceous, elliptical, coarsely, and thickly punctured; punctures æneous, beneath luteous: head very little shorter than the pronotum; tylus hardly extending beyond the juga, a thinly punctured space on the hind border: eyes rather prominent; rostrum black towards the tip, extending a little beyond the fore border of the third abdominal segment: antennæ luteous, slender, black-speckled, first joint not extending to the front of the head; second shorter than the third: pronotum with a smooth longitudinal line, which is dilated on the transverse impression; hind angles obtuse, prominent: scutellum extending rather beyond the angle of the corium, with a smooth interrupted longitudinal line which is dilated on the fore borders at the tip: pectus and underside of abdomen thinly and minutely punctured on each side; punctures black: legs slender, black speckled: hemelytra with a short black stripe on the disc: membrane brown. Shorter than *D. affinis*, Dallas, and the posterior angles of the pronotum are neither convex nor smooth. Long, body, 13 mill.

Reported from Silhat.

141. DALPADA CONFUSA, Distant.

Dalpada confusa, Distant, Trans. Ent. Soc. p. 121 (1879): Scien. Res. 2nd Yarkand Miss. p. 3, f. 1, (1879).

Luteous, thickly covered with green punctures: head emarginate in front, with the sides reflexed and some small indistinct ochreous markings at the base: antennæ pitchy, each joint luteous at the base, the basal and apical joints smallest, second shorter than third, 3-4 subequal: rostrum just passing beyond the posterior coxæ, with the tip pitchy: pronotum somewhat transversely gibbous at the base, in a line with the lateral angles, after which it is abruptly deflexed towards the head; the lateral angles, prominent, subacute; lateral margins denticulated for about half their length from the apex; the punctuation is very dense along the lateral margins and at the pronotal angles: scutellum somewhat gibbous at the base, deflexed towards the apex, where it is more sparingly punctured: corium with a faint impunctate longitudinal line on the disc, extending from the base to about two-thirds its length, rather widened at the apex: membrane extending beyond the apex of the abdomen, pale fuscous, with the veins dark brown for half the length from the base, followed by a row of four brown spots and a marginal row of six spots of the same colour, the two outer ones being long and linear: underside of body luteous, with the pectoral and abdo-

minal margins broadly punctured with green, sparingly on abdomen and more densely on prostethium; legs luteous, thickly spotted with brown; tarsi luteous, apical joint pitchy (*Distant*). Long ♂, 14, breadth of angles of pronotum, $6\frac{1}{2}$ mill: long ♀, 15-16; breadth of angles of pronotum, $7\frac{1}{2}$ mill.

Reported from Murree (Punjab).

Add:—

Dalpada apicifera, Walker, Cat. i, p. 222 (1867) from Hong-Kong: much resembles *D. oculata*, but the posterior angles of the pronotum are not globose. Long, $16\frac{3}{4}$ mill.

Dalpada nodifera, Walker, l. c. from Hong-Kong: posterior angles of the pronotum are more globose than those of *D. oculata*, and the first tibiæ are less dilated. Long, $14\frac{3}{4}$ mill.

Dalpada consobrina, Walker, l. c., p. 225, from Siam, distinguishable from *D. clavata* by its larger size and the markings above and beneath. Long, $16\frac{3}{4}$ mill.

Dalpada brevis, Walker, l. c. p. 226, from Hong-Kong: broader than *D. tecta*. Long, $13\frac{1}{2}$ mill.

Dalpada cinctipes, Walker, l. c. p. 229, from N. China: angles of pronotum much less rounded than in *D. oculata* and the scutellum narrower near the tip. Long, $16\frac{3}{4}$ mill.

Genus APODIPHUS, Spinola.

Ess. p. 295 (1837): Dallas, List Hem. p. 190 (1851): includes *Apodiphya*, Am. & Serv., Hist. Nat. Ins. Hém. p. 108 (1843): Fieber, Eur. Hem. p. 337 (1861).

Elongate: head with the juga extending well beyond the tylus and not uniting in front of it: rostrum arising at a little distance from the labrum and always before the antennæ, the third joint somewhat longer than the second, fourth only half of second: antennæ long, second joint twice as long as the first, third one-fourth the length of second, and fourth as long as second: lateral margins of head and abdomen unarmed: pronotum hexagonal; middle of the sides sinuate; anterior half serrate, humeral angles prominent: scutellum long, narrowed behind the middle towards the apex which is obtuse: mesostethium carinate.

142. APODIPHUS AMYGDALI, Germar.

Halys amygdali, Germar, Reise Dalm. p. 284, t. 9, f. 4 (1817).

Halys hellenica, Lefeb., Mag. Zool. p. 24, t. 24 (1830): Herr. Schöff. Wanz. Ins. v, p. 67, t. 166, f. 512 (1839), and vii, p. 59 (1844): Kolenati, Mel. Ent. iv, p. 43 (1846).

Halys exsculpta, Burm. Handb. Ent. ii, p. 362 (1835).

Apodiphya hellenica, Am. & Serv. Hist. Nat. Ins. Hém. p. 108 (1843).

Apodiphys hellenicus, Spinola, Ess., p. 296 (1837); Dallas, List Hem. p. 190 (1851).

Apodiphya amygdali, Fieber, Eur. Hem. p. 337 (1861).

Apodiphys amygdali, Muls. & Rey, Pun. France, p. 354 (1866); Walker, Cat. Het. i, p. 232 (1867).

Rusty red, thickly punctured black, giving it a marbled appearance above; below, the black points are much finer: connexivum with four double black lines: a line from the tylus to the scutellum also sides of pectus, lighter rusty or yellow-red. Long, 18-22 mill.

Reported from eastern shores of Mediterranean, Greece, Baghdad (mihi), Assam.

Genus ERTHESINA, Spinola.

Ess. p. 291 (1837): Am. & Serv. Hist. Nat. Ins. Hém. p. 104 (1843): Dallas, List Hem. i, p. 153 (1851): Walker, Cat. Het. i, p. 217 (1867): Stål, Ofvers. K. V.-A. Förh. p. 510 (1837); En. Hem. v, p. 37, 45 (1876).

Differs from *Halys* in having the first joint of the rostrum extending beyond the bucculæ and the veins of the membrane simple or somewhat furcate. The juga do not extend beyond the tylus, and are even a little shorter than it: first and last tibæ dilated.

143. ERTHESINA FULLO, Thunberg.

Cimex fullo, Thunb. Nov. Ins. Spec. p. 42, t. 2, f. 57 (1783).

Cimex mucoreus, Fabr. Ent. Syst. iv, p. 117 (1794).

Halys mucorea, Fabr., Syst. Rhyng. p. 183 (1803); Wolff, Ic. Cim. v, p. 185, t. 18, f. 179 (1811); Burmeister, Handb. Ent. ii (i), p. 363 (1835); Herr. Schöff. Wanz, Ins. vii, p. 60 (1844).

Erthesina mucorea, Spinola, Ess., p. 291 (1837); Am. & Serv. Hist. Nat. Ins. Hém. p. 104 (1843).

Erthesina fullo, Dallas, List Hem. i, p. 183 (1851); Uhler, Proc. Ac. Phil. p. 223 (1860); Walker, Cat. Het. i, p. 217 (1867); Stål, En. Hem. v, p. 45 (1876); Distant, Proc. Ent. Soc. p. lvii, (1878); A. M. N. H. (5 s.), iii, p. 45 (1879); Trans. Ent. Soc. p. 415 (1883).

Antennæ, black (apical joint yellow at the base); clypeus porrect, dentated, deep black, the margin and a median line, white: pronotum crenated, scutellum and hemelytra black, punctured white: wings black, immaculate: body olivaceous; margin of abdomen varied black, and a line before the margin formed of black dots: feet black, femora beneath and tibæ, annulated white: first pair of tibæ compressly membranous (*C. mucoreus*, Fabr.).

Head porrect, black, shining, impressly punctured; with a longitudinal line and somewhat raised margins, pale; apex with a small,

straight, impressed line on each side, and before the apex a small tooth ; a small oblique pale line on both sides behind the fuscous eyes ; beneath black, impressly punctured, a broad, pale, impunctate streak on each side : rostrum 4-jointed, long, subpilose, fuscous, pale at the base, lying between two pale, unidentate plates : antennæ 5-jointed, black, last joint yellow at the base : pronotum almost flat, deeply impressly punctured black ; dots and spots, the margin and a longitudinal line somewhat elevated, pale ; posterior angles somewhat acute : scutellum longer than half the abdomen, black, punctured like the pronotum but some of the dots large, distinct, callous, and with three larger whitish spots at the base : hemelytra obscurely fuscous, deeply impressly punctured, a large, more distinct, pale spot on the disc ; membrane black, striated, shining ; wings fuliginous : abdomen above fuscous, margin rounded, prominulous, flavescent, with four deep black ocellar spots on both sides ; beneath convex, greyish, shining, with a groove at the base for the rostrum ; five black marginal spots on both sides ; penultimate segment spotted black : pectus testaceous with black impressed dots and patches, a fuscous speculum between the anterior and intermediate feet : anus entire : feet testaceous, unarmed ; femora with two lines and several spots, black : first tibiæ dilated outwards at the apex, all the tibiæ angulate, black at base and apex, subpilose ; last tibiæ compressed : tarsi 3-jointed, testaceous, black at the apex, subpilose (*Wolff.*). Long, 20-25 mill.

Reported from Java, Ceylon, Bombay, Bengal, China, Japan. The Indian Museum has specimens from Calcutta (mihi), Sikkim, Assam. Very variable in size and depth of colour and in having bucculæ anteriorly rounded or angulate.

144. *ERTHESINA GUTTATA*, Fabricius.

Cimeæ guttatus, Fabr., Mant. Ins. ii, p. 291 (1787) ; Ent. Syst. iv, p. 108 (1794).

Edessa guttata, Fabr., Syst. Rhyng, p. 151 (1803).

Erthesina guttata, Stål, Hem. Fabr. i, p. 23 (1868) : En. Hem. v, p. 45 (1876).

Head oblong, greenish, with a dorsal line and margin whitish : pronotum punctured, scarcely spinose, greenish, sprinkled with numerous white dots : scutellum and hemelytra of the same colour as the pronotum : wings, black : margin of abdomen varied green and white : body beneath, flavescent, with greenish streaks and dots : first pair of femora above greenish, beneath flavescent : first tibiæ membranous, black, with a white ring ; last femora yellow ; last tibiæ, black with a yellow ring (*Fabr.*). Long 23-25 mill.

Reported from Siam, Ceylon, (mihi), India. Differs from *E. fullo*, Thunb. in its larger size, colour above, head broader anteriorly and apex of scutellum pale yellow-whitish.

145. *ERTHESINA ACUMINATA*, Dallas.

Erthesina acuminata, Dallas, List, i, p. 183 (1851); Walker, Cat. Het. i, p. 217 (1867); Stål, En. Hem. v, p. 45 (1876).

♂. Above greyish-testaceous, very thickly punctured with brown: head pointed in front, with the lateral margins slightly toothed near the apex; pitchy brown, with the lateral margins, and a median longitudinal impunctate line, testaceous; pronotum with the anterior portion pitchy brown, more thickly punctured than the posterior, with a short impunctate testaceous line continuous with that of the head: scutellum more coarsely punctured than the rest of the surface, the base with three indistinct testaceous spots: membrane brownish, semitransparent: margins of the abdomen variegated with black and yellow: body beneath testaceous, sparingly punctured with brown: abdomen with a transverse black line on each of the sutures; anal plate dark brown: sternum black: legs testaceous; femora with numerous brown points, and with a brown longitudinal streak on each side; tibiæ brownish at the base and the apex; dilatation of the anterior tibiæ triangular; tarsi with the tip of the apical joint, and the claws, brown: rostrum testaceous, with the apical joint and the edges of the groove in the second and third, deep pitchy brown: antennæ brown, with the two apical joints pitchy, the base of the last joint orange (*Dallas*). Long, 21 mill.

Reported from N. Bengal.

Genus HALYS, Fabricius, Dallas.

Fabr., pt, Syst. Rhyng. p. 103 (1803): Am. & Serv. Hist. Nat. Ins. Hém. p. 108 (1843): Herr. Schöff. Wanz. Ins. vii, p. 54 (1844): Dallas, List Hem. i, p. 153, 187 (1851): Walker, Cat. Het. i, p. 230 (1867): Stål, Hem. Afric. i, p. 80 (1864); Ofvers. K. V.-A. Forh. p. 510 (1867); En. Hem. v, p. 45 (1876).

Head elongated, tapering in front; tylus as long as, or longer than, the jugs; first joint of rostrum not extending beyond the bucculæ: last tibiæ simple, not dilated: apical angles of sixth segment of abdomen rounded at the apex: veins of membrane irregularly ramulose. In *Erthesina*, the last tibiæ are dilated; in *Dalpada*, the head is rounded or truncated at the apex with the sides more or less parallel.

146. *HALYS DENTATA*, Fabricius.

Cimex dentatus, Fabr., Syst. Ent. p. 702 (1775); Spec. Ins. ii, p. 346 (1781); Mant. Ins. ii, p. 284 (1787); Ent. Syst. iv, p. 96 (1794); Wolff. Ic. Cim. ii, p. 51, t. 6, f. 48 (1801): Stoll, Punaises, p. 33 t. 6, f. 47 (1788).

Cimex sulcatus, Thunberg, Nov. Ins. Spec. ii, p. 43 (1783).

Halys serrigera, Westwood, Hope, Cat. Hem. i, p. 23 (1837).

Halys serricollis, Westwood, Hope, Cat. Hem. i, p. 23 (1837).

Halys dentata, Fabr., Syst. Rhyng. p. 180 (1803); Herr. Schöff. Wanz. Ins. vii, p. 60, t. 233, f. 724 (1844); Dallas, List Hem. i, p. 187 (1851); Walker, Cat. Het. i, p. 230 (1867); Stål, En. Hem. v, p. 45 (1876); Distant, A. M. N. H. (5 s.) iii, p. 45 (1879).

Body cinereous and varied with black: head porrect, unidentate on each side: pronotum spinose and with four small teeth on the margin: abdomen beneath canaliculate (*Fabr.*). Antennæ 5-jointed, fuscous, first joint short, stout, rest rufescent at the apex: head, pronotum, scutellum, hemelytra and pectus, greyish, with numerous fuscous or black points and longitudinal lines: head with a small tooth on each side before the fuscous eyes, and two small, flexuose, longitudinal, fuscous lines on the apex; ocelli distant; rostrum 4-jointed, fuscous, greyish at the base, almost as long as the body, second joint curved: pronotum unequal anteriorly, margin (especially the antero-lateral) serrulate, the posterior angles obtusely spinose, transversely impressed in the middle: scutellum as long as half the abdomen, apiculate, with two small impressed lines in the middle, and other black longitudinal lines, also many impressed fuscous points: hemelytra with many impressed fuscous points and black spots forming abbreviated bands; beneath paler: membrane flavescent adorned with black denticulated lines: wings fuliginous, with a fuscous spot at the apex: abdomen above, fuscous, variegated black; beneath fuscous, shining, very finely impressly punctured, a median longitudinal impressed line from the rostrum, entire to the anus: all the feet unarmed, punctured fuscous; tibiæ angulate (*Wolff.*). Vars. (*a*), pronotum with two black longitudinal streaks: (*b*), teeth on the side of the head, obsolete: (*c*), colour paler. Long, 19-23 mill.

Reported from China, Japan, Assam, Bombay, Tranquebar. The Indian Museum possesses specimens from Arakan, Assam, Sikkim (mihi), Calcutta (mihi), Allahabad, Bombay, Madras. Very variable in size and colour.

Genus *ÆSTOPIS*, Distant.

A. M. N. H. (5 s.) iii, p. 48 (1879).

Ovate depressed, head triangular, juga much longer than the tylus, meeting beyond it, but divided at the apex: antennæ 4-jointed; first joint robust, not quite reaching the apex of the head; second joint a little shorter than the third; 3 and 4 subequal; the last somewhat thickened: rostrum reaching the posterior coxæ; apical joint longest: pronotum a little longer than the head, about twice as broad as long, the lateral margins denticulated, the lateral angles prominent; it is

slightly prominent and rounded at the base; deflexed towards the head: scutellum a little longer than broad, extending slightly beyond the base of the membrane, gradually narrowed for two-thirds its length from the base, whence it extends almost straight to the apex, which is narrowed and rounded: membrane with longitudinal veins: abdomen dilated, projecting a little on each side, convex below; abdomen, legs, and sternum unarmed (*Distant*).

The 4-jointed antennæ, length of the juga, and general shape of the body ally this genus to *Atelocera* and *Memmia*.

147.—*CESTOPIS TERRA*, *Distant*.

Cestopis terra, *Distant*, A. M. N. H. (5 s.) iii, p. 49 (1879).

Brownish luteous; corium with a reddish hue, thickly and somewhat regularly covered with darker punctures: head very thickly punctured and somewhat darker in hue: antennæ luteous; apical joint black, luteous at the base: pronotum with the punctures thicker and darker along the lateral and near the anterior margins: scutellum somewhat rugulose, and darker at the base: membrane pale fuscous: abdomen above pitchy; abdominal margin broad and distinct: sternum concolorous with upperside of body; underside of abdomen rather darker, with a faint median longitudinal black line: legs luteous, femora thickly speckled with black (*Distant*). Long, 17; breadth of angles of pronotum, 8 mill.

Reported from Khasiya hills, 4500—6000 feet, (Assam).

Genus *BELOPIS*, *Distant*.

A. M. N. H. (5 s.) iii, p. 50 (1879).

Broad, ovate: head triangular, juga longer than the tylus, and meeting beyond it, but divided at the apex: antennæ 5-jointed: pronotum rather more than twice broader than long; the lateral angles prominent, subacute, the lateral margins denticulated; deflexed towards the head: scutellum with the length equal to the breadth at the base, gradually narrowed for two-thirds the length, and then extending nearly straight to the apex, which is narrowed and rounded: membrane with longitudinal veins: abdomen dilated above, projecting a little on each side; convex below: sternum and abdomen unarmed; tibiæ moderately sulcated (*Distant*).

148.—*BELOPIS UNICOLOR*, *Distant*.

Belopis unicolor, *Distant*, A. M. N. H. (5 s.) iii, p. 50 (1879).

Ochraceous, thickly and finely punctured; punctures somewhat darker on frontal half of pronotum and head: antennæ reddish; second

joint longer than the first, shorter than the fourth, 3 and 5 longest, subequal: scutellum with the median portion punctured, rather darker, lateral edges concolorous with other parts of the upper surface: membrane ochraceous; underside of body and legs concolorous, the former thickly and finely punctured (*Distant*). Long, 14; breadth of angles of pronotum, 10 mill.

Reported from the Khasiya hills (Assam).

Genus ORTHOSCHIZOPS, Spinola.

Gen. In. Art. p. 131 (1852); Stål, Hem. Afric. i, p. 78, 105 (1864); Walker, Cat. Het. i, p. 231 (1867). Stål, En. Hem. v, p. 48, (1876).

Body ovate: head produced; its lateral margins near the eyes armed with a tooth or forming an angle more or less distinct: juga longer than the tylus: bucculæ extended to the base of the head, moderately elevated: rostrum reaching to or extending a little beyond the last pair of feet: antennæ 5-jointed, slender, the first joint not reaching the apex of the head: anterior lateral margins of the pronotum irregularly denticulate: scutellum triangular, lateral margins sinuated in the middle; frena not, or only very slightly, extended behind the middle of the scutellum: membrane reticulated: sterna rather deeply furrowed: venter sometimes slightly furrowed: feet longish, robust, femora unarmed; tibiæ three cornered: corium longer than scutellum, its apical part not so broad (*Stål*).

149.—ORTHOSCHIZOPS ASSIMILIS, Westwood.

Halys assimilis, Westwood, Hope, Cat. Hem. i, p. 21 (1837).

Orthoschizops assimilis, Walker, Cat. Het. i, p. 232 (1867); Stål, En. Hem. v, p. 49 (1876).

Brunneous fuscous, punctured and variegated, black; head anteriorly sub-bifid; sides of pronotum serrate with some somewhat large spines, posterior angle a little prominent: scutellum whitish at the apex: membrane reticulated black: antennæ and feet fuscous brunneous (*Westw.*). Long, 16—17 mill.

Reported from India.

Add as 25 *b* :—

COPTOSOMA FIMBRIATUM, Distant.

Coptosoma fimbriatum, Dist., Trans. Ent. Soc. p. 342 (1887).

Body above, shining black: margin of head (broadly), eyes, ocelli, antennæ, lateral margins of the pronotum, abdominal margin as seen at the base of the scutellum, head beneath, rostrum, legs, margins of the sternum and the abdomen, and anal segment, reddish ochraceous: ab-

domen beneath shining black: sternum dull opaque black. The head is prominent, rounded in front, and not perceptibly sinuated in front of the eyes: the ocelli are situate wide apart, rather nearer to the eyes than to each other: and the tibiæ are sulcated above (*Dist.*). Long, 5; greatest breadth, 5 mill.

Reported from Sikkim (mihi), where it is rather common.

Div. SCIOCORARIA, Stål.

En. Hem. v, p. 49 (1876): *Sciocorides*, pt. Am. & Serv., Hist. Nat. Ins. Hém. p. 118 (1846); *Sciocoridae*, pt., Dallas, List Hem. i, p. 130 (1851).

Head clypeated, not, or only rarely, a little narrower than the base of the scutellum, foliaceously dilated, amplified before the collum, intra-ocular part broader than the collum: ocelli remote from the small eyes; antenniferous tubercles remote from the sides of the head, not distinguishable from above; first joint of the antennæ not reaching the apex of the head: scutellum gradually, or somewhat so, narrowed, from the base; its sides not, or only very slightly, sinuated: entire lateral margins of the body flattened, laminated (*Stål.*)

Genus SCIOCORIS, Fallen.

Hem. Succ. p. 20 (1829): Dallas, pt., List. Hem. i, p. 131 (1851): Fieb. Eur. Hem. p. 355 (1861); Stål, Hem. Afric. i, p. 79, 120 (1864); Ofvers. K. V. A. Förh. xxix, 3, p. 35 (1872); En. Hem. v, p. 49, 50 (1876).

Body oval, depressed, beneath slightly convex: head longish, flattened, foliaceous, juga longer than the tylus, and anteriorly contiguous: ocelli small: rostrum reaching somewhat the last pair of coxæ, first joint not extending beyond the bucculæ posteriorly, second about equal to the two apical taken together: pronotum anteriorly broadly sinuated, lateral margins flattened: scutellum narrowed hindwards, sides not, or only very slightly, sinuated; frena short: veins of membrane simple: pro- and meso-stethium furrowed: feet moderate: first joint of last tarsi a little shorter than the two apical joints taken together (*Stål.*)

150. SCIOCORIS LATERALIS, Fieber.

Sciocoris lateralis, Fieber, Rhynch. p. 21 (1851); Walker, Cat. Het. i, p. 178 (1867); Stål, En. Hem. v, p. 51 (1876).

Oval, grey, thickly punctured brown: pronotum and scutellum with scattered callous spots: head semioval, flat, sides anteriorly almost angular, with a curved transverse impression: rostrum yellowish, terminal joint black: antennæ brownish-yellow, third joint brown above, fourth yellowish at the base, above brown like the entire fifth joint: pronotum $2\frac{1}{2}$ times broader than long; emargination broad, shallow, curved; the disc equally gradually convex hindward; on the slightly

curve] edges, a longitudinal three-cornered whitish spot whose posterior corner reaches almost the humeral angles, the inner corner resting on the transverse furrow which is rather shallow: apex of scutellum rounded, margin sometimes whitish, basal angle black, with a small callous point: hemelytra uniformly thickly punctured, with some brown transverse streaks and dots; corium a little longer than the scutellum, apex almost acute-angled, a long four-cornered spot at the base, as also the principal vein with an abbreviated streak becoming broader hindward, yellowish-white: suture of membrane almost straight, membrane diaphanous with raised veins having scattered brown dots between them: dorsum black; the two posterior tibiæ with yellowish lateral spots: connexivum at the emarginations with four-cornered black-punctured and often ocellated spots: pectus black between the feet, the sides thickly punctured brown, the acetabula less so: feet coarsely punctured, before the tips of the femora a whitish and black punctured ring: abdomen thickly punctured brown, the median part, a zigzag lateral streak, and a semicircular lateral spot, yellowish-white; both sides of the lateral streak densely punctured; the middle of the base of the sixth abdominal segment and two dots on the third abdominal segment, black. Long, $4\frac{1}{4}$ mill.

Reported from further India.

151. SCIOCORIS INDICUS.

Sciocoris indicus, Dallas, List Hem. i, p. 132 (1851); Walker, Cat. Het. i, p. 177 (1867); (?) Stål, En. Hem. v, p. 128 (1876).

♀. Grey, punctured; head subelongate; antennæ fuscous at the apex; feet pale, punctured fuscous; membrane punctured fuscous; body beneath fuscous-grey, apical spot black (*Dallas*). Long $5\frac{1}{2}$ —6 mill.

Reported from N. India.

Div. MYROCHARIA, Stål.

En. Hem. v, p. 52 (1876).

Lateral margins of the head and generally also of the pronotum flattened, laminated; the lateral margins of the head posteriorly not, or only obsoletely, sinuated; those of the pronotum entire or very obsoletely crenulate: juga generally longer than the tylus, and, before the tylus, contiguous; antenniferous tubercles not, or only rarely, very slightly prominulous beyond the sides of the head: first joint of the antennæ not reaching the apex of the head: rostrum moderate or shortish, second joint shorter than the two apical taken together, or at least not longer: mesostethium generally furrowed: femora, at least the first pair, spinose beneath: venter without a furrow, unarmed at the base (*Stål*).

Genus LAPRIUS, Stål.

Ofvers. K. V.-A. Förh. p. 200 (1861); l. c., p. 505 (1867); En. Hem. v, p. 52 (1876).

Head slightly narrowed forwards, subovate, almost as long as the pronotum; lateral margins not, or but very slightly, sinuate before the eyes; juga not, or but very slightly, extending beyond the tylus, entirely distant from each other; antenniferous tubercles very slightly prominulous beyond the lateral margins of the head, with a small spine at the apex externally; first joint of the antennæ not reaching the apex of the head, second joint much longer than the third; ocelli moderate or large, moderately distant from the eyes, much more distant from each other; rostrum extending behind the intermediate pair of feet, second joint shorter than the two apical taken together: pronotum with anterior lateral margins entire, anterior angles not produced to the eyes, lateral angles prominent; anteriorly, between the eyes, broadly sinuate: frena extended beyond the middle of the scutellum which is triangular and gradually narrowed: pro- and meso-stethium distinctly furrowed: apertures of the odoriferous apparatus auriculate.

152. LAPRIUS VARICORNIS, Dallas.

Sciocoris varicornis, Dallas, List Hem. i, p. 136 (1851); Walker, Cat. Het. i, p. 177 (1867); Scott, A. M. N. H. (4 s.) xiv, p. 289 (1874).

Laprius varicornis, Stål, Ofvers. K. V.-A., Förh., p. 623 (1870); En. Hem. v, p. 52 (1876); Distant, A. M. N. H. (5 s.) iii, p. 45 (1879).

♂, ♀. Ovate, pale, brownish grey, very thickly and finely punctured with brown: eyes black: pronotum with the anterior angles acute, somewhat produced anteriorly: scutellum with a small pale impunctate spot in each basal angle: hemelytra more or less ferruginous, membrane brownish: abdomen beneath very thickly punctured with black, the punctures of the margins sometimes colourless; within the line of the stigmata on each side, is a row of short whitish lines: legs testaceous; femora with a few brown points; tibiæ towards the apex and the tarsi brown: rostrum testaceous, with the apex brown: antennæ with the three basal joints red, the apex of the third black; two apical joints black, with the base yellowish. A variety has a red tinge on the upper surface; margins of abdomen beneath, tips of femora, base and tips of tibiæ, and entire third joint of antennæ, red (*Dallas*). Long, ♂, 11 mill; ♀ 11 $\frac{3}{4}$ mill.

Reported from N. India, Rangoon, Philippines, China, Japan, common in Sikkim (mihi).

153. *LAPRIUS GASTRICUS*, Thunberg.

Cimex gastricus, Thunb., Hem. Rostr. Cap. ii, p. 1 (1822).

Paramecocoris gastricus, Stål, Ofvers. K. V.-A. Förh. p. 182 (1855); l. c., p. 56 (1856); Walker, Cat. Het. i, p. 178 (1867).

Laprius gastricus, Stål, En. Hem. v, p. 52 (1876); Distant, Trans. Ent. Soc., p. 415 (1883).

Yellow-testaceous, densely and somewhat deeply punctured black fuscous: head with the sides parallel, oblique from the middle: scutellum furnished on both sides at the base with a yellow testaceous callus, impunctate: membrane fuscous: body beneath with feet, of a weaker colour, less densely punctured; abdomen with a blackish streak on both sides; antennæ rufescent, two last joints fuscous, sordid yellow at the base (*Stål*). Long, 9; broad, 5 mill.

Reported from India, Japan.

Genus *ÆDNUS*, Dallas.

List Hem. i, p. 144 (1851); En. Hem. v, p. 54 (1876).

Head rather short, rounded and slightly emarginate at the apex, with the juga meeting beyond the tylus; eyes prominent; ocelli minute, distant; antennæ about half the length of the body, 5-jointed; basal joint shortest, not reaching the apex of the head; second joint shorter than the third, which is shorter than the fourth; fifth joint longest: rostrum rather short, not reaching the posterior coxæ, slender, inserted about the middle of the under surface of the head; basal joint reaching the base of the head; second joint longest, third longer than the first, fourth shortest: body ovate: pronotum transverse with the anterior angles projecting beyond the eyes: scutellum about two-thirds of the length of the abdomen, becoming narrower from the base to about the middle, then straight to the apex, which is broad and rounded: membrane with 4-5 longitudinal veins which are more or less ramose or somewhat reticulated at the apical margin: abdomen and sternum unarmed: legs moderate: femora with a double row of minute spines or tubercles on the under side, especially towards the apex: tarsi 3-jointed, with the basal and apical joints about equal (*Dallas*). Distinguished by the large size of the scutellum which reaches nearly to the apex of the body and thus gives it a great resemblance to *Podops*.

154. *ÆDNUS OBSCURUS*, Dallas.

Ædnus obscurus, Dallas, List Hem. i, p. 145, t. 3, f. 5 (1851); Walker, Cat. Het. i, p. 182 (1867); Stål, Ofvers. K. V.-A. Förh. p. 623 (1870); En. Hem. v, p. 54 (1876).

Ædnus similis, Hagl., Stettin Ent. Zeit. xxix, p. 154 (1868); Walker, Cat. Het. iii, p. 539 (1868).

♀. Above pitchy, obscure, very thickly punctured and some-

what rugose; membrane semitransparent, brownish, veins brown; abdomen beneath slightly shining, thickly and finely punctured, with the margins broadly testaceous, and finely punctured brown: legs brown, with the tarsi pale testaceous: rostrum testaceous, antennæ black, with the apical joint pale fulvous (*Dallas*). Long $8\frac{1}{2}$ — $9\frac{1}{2}$ mill.

♂. Oblong fuscous-lurid, densely and strongly punctured fuscous, beneath shining subæneous: apex of antennæ, rostrum, coxæ and tarsi, also marginal streak on venter obscurely testaceous: membrane brunnescent, veins and margin more obscure: wings fuscous: second joint of antennæ somewhat shorter than the third: rostrum not reaching the last pair of coxæ; sides of pronotum nearly straight (*Haglund*). Long, 9; broad, $5\frac{1}{4}$; exp. hemi., 17 mill.

Reported from Gilolo, Borneo, Java, Philippines, Rangoon.

155. *ÆDNUS VENTRALIS*, Dallas.

Ædnus ventralis, Dallas, Trans. Ent. Soc. (n. s.) ii, p. 10, t. 1, f. 3 (1852); Stål, En. Hem. v, p. 54 (1876); Distant, A. M. N. H. (5 s.), iii, p. 45 (1879).

Ovate, rather convex, pale greyish brown, very thickly and finely punctured with black: head rather small, very minutely punctured with black above and beneath: eyes pale; ocelli yellowish: antennæ slender, rather sparingly clothed with short hairs; three first joints testaceous, fourth joint pale brown, with the base testaceous; fifth joint, pale brown; rostrum yellow: pronotum very thickly and finely punctured with black, with the punctures more distant on a slightly impressed space which crosses the disc about the middle, forming a pale transverse band; immediately in front of this impressed space are four small tubercles: scutellum very large, reaching very nearly to the apex of the body, constricted a little before the middle; very thickly and finely punctured with black, more thickly punctured and somewhat rugose towards the base, where there is a small smooth whitish point on each side within the basal angles; the basal angles themselves black: pectus rather darker than the upper surface, very thickly and finely punctured with black: legs yellow; femora with numerous black or brown points, the anterior pair with a double row of small black spines on the lower surface: tibiæ with a few brown points, and with a few minute bristles along the edges: the coriaceous portion of the hemelytra rather less thickly punctured than the pronotum and scutellum: membrane transparent, colourless: wings semitransparent, iridescent: abdomen beneath deep shining black, slightly brassy, very thickly and finely punctured; the margins pale griseous, thickly and finely punctured with black; the edges with small black spots at the junctions of the segments

(*Dallas*). No portion of the inner or apical margin of the corium is covered by the scutellum. Long, 6—7½ mill.

Reported from HONG-KONG, Assam, Sikkim (mihi).

Following Stål, I place in the sub-family *Pentatomina* those genera of Dallas' *Pentatomidæ* found in India which Stål distributes amongst the following divisions, and which are distinguished by having the tarsi 3-jointed and the scutellum extended to a distance behind the frena. The species are rather numerous and difficult to arrange, but I have no doubt that we shall, in a short time, be able to give a more exact distribution.

GROUP A.

a. The first group of these divisions includes those genera in which the venter is unarmed at the base, second segment without a spine or tubercle prominulous forwards and reaching, or somewhat so, the metastethium, and sometimes furrowed; margins of furrow, however, neither callously elevated, nor levigate: anterior margin of the pronotum very rarely somewhat elevated, levigate or callous: tibiæ above generally furrowed or flat and margined, except *Agonoscelis*, in which they are without a furrow and rounded: second joint of the antennæ sometimes not extending beyond the apex of the head: orifices entirely margined, or auriculated, or continued in a furrow.

b. Corium anteriorly generally confusedly punctured between the costal margin and the intracostal vein, the costal margin anteriorly generally acute or flattened and somewhat laminated, the space between the margin and the vein therefore somewhat broad; this space rarely very narrow (as in *Diploxys*) with a single row of points: orifices generally continued outwards in a long or somewhat long furrow; basal angles of the scutellum rarely with a spot or levigate, callous streak: juga sometimes much longer than the tylus and acuminate: anterior lateral margins of the pronotum rarely obtusely rounded: second joint of the antennæ sometimes not, or barely, extending beyond the apex of the head.

c. Head flat or somewhat so, lateral margins acute and laminated or prominulous before the middle in a straight, tooth-shaped angle; juga generally longer than the tylus, often much longer and contiguous before the tylus: anterior lateral margins of pronotum generally acute, or somewhat so, sometimes laminated; bucculæ not prominulous posteriorly in a lobe: scutellum posteriorly narrow, or somewhat so: frena extended to rather a distance behind the middle of the scutellum: body never greenish: venter not, unless in the second segment, furrowed.

d. Basal angles of the scutellum without an impression or with a small somewhat rounded and somewhat obsolete one: sixth ventral segment in ♂ anteriorly rounded: entire second joint of the antennæ extending beyond the apex of the head: body oval or broadly oval; anterior lateral margins of the pronotum entire: third joint of rostrum longer than the fourth: furrow of the orifices moderate or somewhat short, abruptly abbreviated, not continued in a wrinkle or ridge.

This group includes the divisions *Odiaria*, *Tropycorypharia*, *Capæaria*, *Carpocoraria*, *Diploxiaria*, *Eysarcoriaria*, and *Agonosceliaria*.

Div. ODIARIA, Stål.

En. Hem. v, p. 55, (1876).

This division includes the genera having the characters given in *a.* to *d.* above.

Genus PARAMECUS, Fieber.

Rhynchotographia, p. 34 (1851).

Body elongate, somewhat convex: head elongate, almost equally broad throughout, convex beneath; the juga somewhat longer than the tylus, rounded on the sides, almost right-angled inwards: antennæ one-half the length of the body, joints almost of equal thickness, the third shortest; the second joint a little shorter than either of the two last: the jugular plates very low, as long as the basal joint of the rostrum, and shorter than the head: rostrum rather stout, reaching beyond the intermediate coxæ; second joint longest; third incrassate, half the length of the second; fourth cylindrical, black: prostethium short, not so long as the meso- or meta-stethium which are of equal length: pronotum hexagonal, convex between the humeral angles which are prominent and furnished with a small tooth: scutellum two-thirds the length of the dorsum, the last fourth of the length abruptly narrowed, pointed: hemelytra longer than the scutellum, pointed at the end; membrane reaching beyond the apex of the abdomen, with five furcate veins: tarsi robust, basal joint stouter, and as long as the two following taken together.

156. PARAMECUS RUFICORNIS, Fieber.

Paramecus ruficornis, Fieb., Rhynch., p. 35 (1851): Stål, En. Hem. v, p. 71 (1876).

Ochreous-yellow, punctured black; elongate: pronotum anteriorly with two black points: scutellum with a slightly punctured, pale, median streak, and more slightly punctured patch; border line on pronotum and marginal spot, yellowish; two black points anteriorly: antennæ,

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base of venter, dorsum beneath, and feet, yellow-ferruginous: membrane sordid, veins darker; stigmata and pectus, black (*Lieber*). Long, $12\frac{1}{2}$ mill.

Reported from Further India.

Genus PLEXIPPUS, Stål.

Ofvers. K. V.-A. Förh., p. 505 (1867): En. Hem. v, p. 55, 71 (1876).

Head short, much shorter than the pronotum, almost shorter than broad between the eyes, rather narrowed forwards, rounded at the apex, lateral margins scarcely sinuate before the eyes; juga somewhat longer than the tylus, distant; ocelli a little more than twice more distant from each other than from the eyes; first joint of antennæ even with the apex of the head, second joint scarcely as long as the third; rostrum not extending beyond the intermediate feet, short: anterior margin of pronotum obliquely and somewhat broadly truncate behind the eyes, anterior lateral margins slightly rounded, anterior angles obtuse, a little prominulous beyond the eyes: apical angle of corium a little produced, apical margin somewhat sinuate near the apical angle: veins of membrane simple: pro-stethium slightly impressed; meso-stethium, slightly carinate: second ventral segment very slightly convexly elevated in the middle: odoriferous apertures continued in a not long, abruptly abbreviated furrow (*Stål*).

157. PLEXIPPUS DORSALIS, Stål.

Plexippus dorsalis, Stål, Berlin Ent. Zeitsch. xiii, p. 226 (1869): En. Hem., p. 71 (1876).

♀. Subobovate: weakly greyish-flavescent, above rather densely punctured black, these dots are arranged behind the middle of the pronotum and before the middle of the scutellum in short irregular lines: membrane weakly fuscous-greyish, veins more obscure, exterior basal angle fuscous: dorsum of abdomen fuscous-violaceous; connexivum blackish, two last segments obsoletely palely streaked; wings slightly infuscate; spiracula narrowly circled black. Like *R. fulvescens*, Dallas. Base of head, at the eyes, marked by an impunctate spot; juga gradually converging, a little distant at the apex: antennæ remotely and briefly setose, second joint more than twice as long as first: pronotum more than half longer than the head, almost more than twice broader than long, anterior margin slightly elevated between the eyes, lateral margins slightly rounded, narrowly black: scutellum sparingly palely punctured at the apex: exterior margin of corium narrowly blackish towards the base: pro-stethium sparingly and palely punctured, exterior margin black: meso-stethium sparingly punctured towards the coxæ

meta-stethium opaque, strigose, posteriorly and outwards shining, posteriorly sparingly punctured: venter aciculate, sparingly punctulate towards the sides, with a broad levigate median streak; second segment slightly convex in the middle, depressed on both sides at the convex part (*Stål*). Long, 15; broad, 8 mill.

Reported from India.

Div. TROPYCOEYPHARIA.

En. Hem. v, p. 56 (1876).

a. b. as in *Odiaria*, (p. 17).

c. Lateral margins of the head and pronotum not or less acute, those of the pronotum never laminated: juga rarely longer than the tylus, then generally acuminate or gradually narrowed: frena generally extended beyond the middle of the scutellum: in those genera in which the juga are longer than the tylus, generally not extending beyond the middle of the scutellum, in which case also the scutellum posteriorly broad, or somewhat so: body sometimes greenish: venter sometimes with a long furrow.

d. Head flat, juga rarely somewhat longer than the tylus: scutellum generally posteriorly narrow or moderately broad: frena generally extended behind the middle of the scutellum: entire second joint of the antennæ, or a great part, extending beyond the apex of the head: venter not furrowed.

e. First joint of rostrum very rarely extended behind the bucculæ, and if so, the basal angles of the scutellum have a largish, levigate, callous, pallid spot.

f. The furrow of the odoriferous apertures continued in a wrinkle or ridge extended beyond the middle of the breadth of the pleuræ, gradually acuminate.

g. Connexivum pale, green, or flavescent, without black or aenescent-black spots or bands, occupying the entire breadth of the segments: segments rarely more obscurely punctured anteriorly and posteriorly than in the middle: basal angles of scutellum without a callous spot or with a very minute and very obsolete one.

Genus NIPHE, *Stål*.

Ofvers. K. V.-A. Förh., p. 516 (1867): En. Hem. v, p. 56, 73 (1876).

Head gradually distinctly narrowed forwards, lateral margins acute, very slightly or but scarcely sinuate behind the middle; juga a little longer than the tylus, hiscent; bucculæ continued through, slightly raised; ocelli a little more than twice as far from each other than from the eyes; rostrum extended to or between the last pair of coxæ, first

joint about on a level with the bucculæ, second joint longer than the third; antennæ slender, first joint not reaching apex of head: anterior margin of pronotum neither reflexed nor callous, broadly sinuate, truncate behind the eyes, anterior lateral margins straight, very slightly reflexed, lateral angles somewhat obtuse, very slightly prominulous: scutellum moderate, much longer than broad, narrow at the apex, frena extended to third apical part of scutellum: costal margin of corium very slightly rounded, apical angle not produced: meso-stethium carinate: furrow from the odoriferous aperture gradually narrowed and continued in a ridge or wrinkle: abdomen not or hardly broader than the hemelytra, extremity of angles of segments prominulous: body narrowly obovate (*Stål*).

158. NIPHE CEPHALUS, Dallas.

Pentatoma cephalus, Dallas, List Hem. i, p. 245 (1851); Walker, Cat. Het. ii, p. 303 (1867).

Niphe cephalus, Stål, Ofvers. K. V.-A. Förh., p. 516 (1867); En. Hem. v, p. 73 (1876).

♀. Oblong, ovate, pale yellowish brown, thickly and finely punctured with dark brown: head large, slightly emarginate at the apex, the juga a little longer than the tylus, eyes brown; ocelli yellow: pronotum with the punctures very close along the lateral margins, causing them to appear much darker than the rest of the surface: scutellum with the apex orange: membrane semi-transparent, brownish, with darker veins: abdomen beneath tawny, irregularly and sparingly punctured with black, with a brown spot in the middle of the third segment: pectus of the same colour as the abdomen, rather thickly punctured, with some of the punctures black: legs of the same colour, with numerous black points: rostrum brownish testaceous: antennæ testaceous, with the tip of the third, and apical half of the 4 and 5 joints, black (*Dallas*.) Long, 15—16 mill.

Reported from Java, India.

159. NIPHE ELONGATA, Dallas.

Pentatoma elongata, Dallas, List Hem. i, p. 246 (1851); Walker, Cat. Het. ii, p. 299 (1837).

Niphe elongata, Stål, Ofvers. K. V.-A. Förh., p. 516 (1867), l. c. p. 625 (1870); En. Hem. v, p. 73 (1876).

♀. Elongate, somewhat oblong, with the sides parallel; testaceous, above thickly and finely punctured with black: head with the tylus as long as the juga; ocelli red: scutellum very long: coriaceous portion of the hemelytra with the outer margin yellowish-white; membrane semi-

transparent, brownish, with the veins a little darker: abdomen beneath testaceous, with the disc impunctate, the sides faintly punctured; stigmata black: pectus rather strongly punctured, with some of the punctures black: legs yellowish; tarsi fulvous: rostrum not passing the intermediate coxæ, pale yellow, with the tip black: antennæ with the three basal joints bright red; fourth black, with the base red; fifth black, with the base and apex red (*Dallas*). Long $12\frac{1}{2}$ —13 mill.

Reported from Philippines, Rangoon, N. India. Differs from *N. cephalus*, Dallas, in its narrower stature and the costal limb of the corium being furnished with colourless punctures.

Div. CAPPÆARIA.

En. Hem. v, p. 57 (1876).

a. to *f.* as in *Tropycorypharia*, (p. 19).

g. Segments of connexivum black, punctured, adorned with a median band or flavescent marginal spot, generally less densely punctured or somewhat levigate: basal angles of the scutellum marked by a pale, levigate spot, sometimes small and indeterminate and sometimes very large: anterior lateral margins of the pronotum slightly reflexed, sometimes callous, straight or somewhat so, entire, simple: tibiæ above, flat, margined.

Genus CAPPÆA, Ellenrieder.

Nat. Tijdskr. Ned. Ind. xxiv, p. 146 (1860); Walker, Cat. Het. ii, p. 144 (1867), Stål, Ofvers. K. V.-A. Förh., p. 514 (1867); En. Hem. v, p. 57, 74 (1876).

Allied to *Halys*, but body shorter, more depressed: head flat, as long as the pronotum, its basal margin broader than the anterior margin of the pronotum; juga shorter than the tylus, margin of juga, rounded, entire; tylus broader towards the apex which is arcuate: eyes small, prominulous; ocelli near the eyes, not very distinct: first joint of the antennæ shorter than the head, scarcely intumescent, 2-5 joints almost equal in length, third joint nodulose at the end, 4 and 5 joints robust: pronotum flattened, slightly sloped hindward behind the posterior interangular line; anterior angles somewhat acute, behind them, on the lateral margin, 3-4 not very conspicuous small teeth, posterior angles not very prominent, angular: scutellum broad, longer than half the abdomen: coriaceous portion of hemelytra long, flat; membrane short, extending beyond the abdomen which is almost orbicular, broader than the pronotum, its lateral margins extending beyond the hemelytra, flattened:

rostrum reaching second ventral segment, second joint very long, rest nearly equal, last somewhat smaller, robust: venter very convex, ventral furrow short, not conspicuous; feet slender (*Ellenr.*).

160. *CAPPÆA TAPROBANENSIS*, Dallas.

Pentatoma taprobanensis, Dallas, List Hem. i, p. 244 (1851); Walker, Cat. Hem. ii, p. 299 (1867).

Cappæa multilinea, *Ellenr. Nat. Tijdskr. Ned. Ind.* xxiv, p. 147, f. 17 (1862).

Cappæa taprobanensis, Stål, *En. Hem.* v, p. 74 (1876); Distant, A. M. N. H. (5 s.) iii, p. 45 (1879).

♀. Ovate, broad, flat: head rather long, rounded at the apex, black, with the lateral margins and three longitudinal lines testaceous: the black portions thickly and finely punctured, the pale lines impunctate: ocelli minute, yellow: pronotum testaceous, covered with fine black punctures, which leave only narrow lines of the pale colour visible: of the dark patches there are two small ones in the middle of the anterior margin, a larger ocellated spot in each anterior angle, two larger spots occupying the whole middle of the disc, and having a very distinct longitudinal median line, and two rather smaller on each side of these; there is also a narrow line of black punctures within each lateral margin: scutellum thickly punctured with black, especially at the base, with a pale impunctate line running down the middle from base to apex, and a curved line on each side of this running from the base to the middle of the median line, at which point the three lines are united: hemelytra testaceous, clouded with black punctures, with no distinct pale lines; membrane brownish, somewhat opaque, covered with brown spots: margins of the abdomen testaceous, with a large bifid black spot at the junction of each segment, both above and beneath: body beneath testaceous: abdomen smooth and shining, with a few fine punctures on the sides; the stigmata and two spots on each side of each segment, forming two longitudinal rows of spots on each side of the abdomen, black; the space between each pair of black spots is orange: pectus finely and irregularly punctured, with numerous black spots on each side: legs pale testaceous; femora thickly covered with black points; tibiæ covered with fine black points; tarsi nearly black: rostrum long, reaching the base of the third ventral segment; basal joint and the base of the second, testaceous; 2 and 3 joints brownish; fourth black: antennæ with the basal joint, testaceous, spotted with black; 2 and 3 joints brown, (*Dallas*). Long, 11—11½ mill.

Reported from Java, Sumatra, Ceylon, Assam. The Indian Museum has specimens from Ceylon, Malabar, Assam (Sibságar), Conoor (mih).

Genus HALYOMORPHA, Mayr.

Verh. Zool.-Bot. Ges. Wien. xiv, p. 911 (1864): Reise Novara, p. 47 (1866): Stål, En. Hem. v, p. 57, 74 (1876).

Body above compressed, beneath convex, head above flat, broad at apex, rounded, lateral margins narrowly reflexed, parallel, a little sinuate: tylus as long as the juga: antennæ 5-jointed, first joint not reaching apex of head, 3-5 joints somewhat of equal length, second joint shorter than third: bucculæ narrow, continued through, anteriorly dilated, subdentiform: rostrum reaching 2 or 3 segments of the abdomen; first joint a little shorter than the bucculæ, second joint scarcely twice as long as the first and shorter than the two apical taken together: eyes large, sessile: ocelli thrice more distant from each other than from the eyes: pronotum transversely somewhat sexangular, anterior angles with a transverse tooth, anterior lateral margins straight, smooth and narrowly reflexed, shoulders a little prominent, rounded: scutellum triangular, posteriorly narrowed: membrane with some somewhat parallel costæ: metastethium compressed: odoriferous aperture with a margined transverse furrow, produced to a distance outwards, gradually evanescent: abdomen beneath not sulcate, convex; margins acute, unarmed: feet simple: tibiæ broadly sulcate externally; first and third joints of tarsi of equal length (*Mayr*).

161. HALYOMORPHA PICUS, Fabricius.

Cimex picus, Fabr., Ent. Syst. iv, p. 115 (1794). India.

Cimex marmoreus, Fabr., Ent. Syst. Suppt. p. 534 (1798). India.

Cimex cinnamomeus, Wolff, Ic. Cim. iii, p. 99, f. 93 (1802). India.

Edessa picus, Fabr., Syst. Rhyng., p. 153 (1803).

Edessa marmorea, Fabr., Syst. Rhyng., p. 153 (1803).

Halys timorensis, Westwood, Hope, Cat. Hem. i, p. 22 (1837): Signoret, Bull. S. E. F. (6 s.) i, p. xli (1881). China, Timor.

Pentatoma timorensis, Dallas, List Hem. i, p. 242 (1852): Walker, Cat. Het. ii, p. 299 (1867). Ceylon.

Pentatoma halys, Stål, Ofvers. K. V.-A. Förh., p. 182 (1855); l. c., p. 59 (1856): Walker, l. c. ii, p. 300 (1867). China.

Pentatoma trivialis, A. Dohrn, Stettin Ent. Zeit. xxi, p. 400 (1860): Walker, l. c., p. 300 (1867). Ceylon.

Pæcilometis mistus, Uhler, Proc. Ac. Phil., p. 223 (1860). Japan.

Halyomorpha timorensis, Mayr, Reise Nov. Hem., p. 50 (1866). Hong Kong, Shanghai.

Dalpada remota, Walker, l. c. i, p. 227 (1867), sec. Distant, Ent. M. M., xvi, p. 201 (1880). Hong Kong.

Halyomorpha picus, Stål, Hem. Fabr. i, p. 24 (1868); En. Hem. v, p. 75 (1876); Scott. A. M. N. H. (4 s.) xiv, p. 290 (1874); Distant, l. c. (5 s.), iii, p. 45 (1879); Trans. Ent. Soc., p. 415 (1883).

Antennæ black; third joint with a white ring at the base: head,

pronotum, scutellum, hemelytra greyish or yellow, irrorated with very numerous black dots: beneath flavescent, a lateral line on the pectus, brassy black: femora yellow, punctured black; tibiæ black with a broad white ring at the base (*C. picus*, Fabr.). Body above grey: pronotum anteriorly with two minute yellow dots, posteriorly fuscous: scutellum with two distinct, minute dots at the base: beneath flavescent, a median line and the margins fuscous, and on each abdominal segment on both sides, a small black dot: feet flavescent, punctured fuscous (*C. marmoreus*, Fabr.). Luteous-grey, punctured brassy-black, somewhat variegated: head and pronotum with the sides entire, the latter with four minute luteous dots placed transversely: membrane pale, with six fuscous longitudinal veins, interrupted in the middle: margin of abdomen punctured black and luteous (*H. timorensis*, Westw.). Long, 15—16 mill.

Reported from Timor, China, Japan, Ceylon, Assam, India. A variable and not a very uncommon species in Sikkim and Assam (mihi).

162. HALYOMORPHA SCUTELLATA, Distant.

Halyomorpha scutellata, Distant, A. M. N. H. (5 s.) iii, p. 51 (1879).

Brunneous, thickly and strongly punctured: head with frontal and lateral margins black; eyes pitchy; ocelli brown, shining: rostrum black, reaching posterior coxæ: antennæ black; second joint much shorter than the third, fourth joint rather longer than the fifth, both of which are pilose: pronotum with the lateral margins narrowly reflexed, bordered with black, with the extreme edge sanguineous for about two thirds of the length from the apex; base rugulose. a somewhat triangular space enclosed by pale impunctate lines situated on each side of the frontal border behind the eyes; lateral angles prominent: scutellum bright luteous with two dots at the base, two small parallel lines on the disc, and the lateral margin, very narrowly at the base and broadly towards the apex, brunneous; the luteous area has a few deep brown punctures, the other brunneous portion of the scutellum punctured as on other parts of the upper surface: membrane fuscous, with strong longitudinal veins: abdomen above sanguineous, with a marginal row of blueish-black spots, situated conjointly in pairs at the base and the apex of each segment, both above and below: underside of body sanguineous; prostethium with some greenish markings behind the eyes, a large dull blackish patch near the odoriferous apertures, a stigmatal row of rounded blueish-black spots and a large pitchy spot near the apex: legs black; coxæ sanguineous, bases of femora dull reddish (*Distant*). Long, 16; breadth ang. pronot. 9 mill.

Var. *a.* Scutellum without the two brown lines on the disc, marginal and stigmatal spots on the underside of the abdomen coalescing; prostethium with a large black spot behind the eyes in place of greenish markings.

Var. *b.* Specimens from Bombay have the upper surface bluish instead of brownish, have typical scutellar markings, but underside as in var. *a.*

Reported from N. Khasiya hills, 1500-3000 feet; Bombay.

163. HALYOMORPHA MURREA, Distant.

Halyomorpha murrea, Dist., Trans. Ent. Soc. p. 344, t. 12 f. 5 (1887).

Body above very pale greenish ochraceous; the corium (except the marginal area), and basal area of the pronotum with a slight purplish tinge: lateral margins of the head, margins of tylus, a small linear spot at the base of the head, and a similar spot on each side before the eyes, black; eyes somewhat purplish; ocelli pale castaneous; antennæ with the basal joint greenish ochraceous, minutely speckled black, 2-3 joints purplish, apical half of third joint black, second joint a little shorter than the third; rostrum just passes the last coxæ; pronotum with the lateral margins and a double row of spots on anterior half, ochraceous; between and around these spots are a number of small and somewhat tessellated black spots; basal half minutely and sparingly darkly punctate: scutellum with four black spots at the base, two median and one near each basal angle, four more obscure and broken black spots across the disc, followed by two similar spots on the basal half, some tessellated and minute black spots at the apex, and a row of minute dark punctures on each lateral margin, from basal third to the apex: corium minutely and sparingly darkly punctate, costal area greenish, thickly and irregularly spotted black, lateral margins near base ochraceous: connexivum ochraceous, with a black linear spot at the base and apex of each marginal segment: membrane extending much beyond the abdomen, pale obscure creamy, minutely and sparingly speckled black, basal two-thirds pale purplish from reflection of abdomen beneath: body beneath and legs pale greenish, a linear spot in front and behind the eyes, a spot near anterior and intermediate coxæ, a spot towards lateral margins of meso- and meta-stethium, a spot at base of the anterior tibiæ, a spot near apices of two last pair femora, a marginal spot at base and apex of apical segments, and the apex of the rostrum, black (*Dist.*), Long, 15; exp. angl. pron., 8 mill.

Reported from Sikkim, a single specimen (mihi).

Genus TOLUMNIA, Stål.

Ofvers. K. V.-A. Förh. p. 515 (1867): En. Hem. v, p. 57, 75 (1876).

Margins of pronotum anteriorly, and anterior lateral margins, calous or elevated; head distinctly narrowed forwards, rounded at apex, lateral margins somewhat acute, very slightly sinuated behind the middle, tylus somewhat longer than the juga; bucculæ continued through, moderately elevated; ocelli scarcely thrice as distant from each other as from the eyes; rostrum somewhat produced behind the last coxæ, first joint scarcely extending beyond or only equal to the bucculæ, second joint scarcely or but little longer than the third: anterior margin of the pronotum slightly truncate behind the eyes, lateral angles very slightly prominulous, somewhat straight: apical margin of corium very slightly sinuate near the apical angle which is somewhat rounded at the extreme edge: mesostethium distinctly carinate: extremity of angles of abdominal segments acutely prominulous: first tibiæ sometimes dilated (*Stål*).

164. TOLUMNIA LATIPES, Dallas.

Pentatoma latipes, Dallas, List Hem i, p. 238 (1857): Walker, Cat. Het. ii, p. 298 (1876).

Dalpada obtusicollis, Ellenr., Nat. Tijdsskr. Ned. Ind. xxiv, p. 143, f. 10 (1862).

Tolumnia latipes, Stål, En. Hem. v, p. 75, (1876); Distant, A. M. N. H. (5 s.) iii, p. 45 (1879).

♂, ♀. Ovate, above dark brown, thickly punctured, irrorated with yellow spots: pronotum with the lateral margins yellowish white: scutellum with a large yellowish white spot in each basal angle, and the apex of the same colour: membrane brownish, semi-transparent: margins of the abdomen banded with black and yellowish-white, the middle of each segment being white: body beneath pale yellow, shining, finely and sparingly punctured: abdomen with a small brown or black spot on the apical segment: pectus with a row of three spots on each side: legs whitish, the apices of the femora the tibiæ and the tarsi, black; the anterior tibiæ are considerably dilated on the outside towards the apex: rostrum reaching the base of the abdomen, whitish, with the tip black: antennæ with the basal joint black; the two following pale brown; 4 and 5 joints black with their bases whitish, (*Dallas*).

Long, ♂, $8\frac{1}{2}$ —9: ♀, $10\frac{1}{2}$ —11 mill.

Reported from Sumatra, Siam, Tenasserim, Burma, Assam. The Indian Museum has specimens from Sikkim (mihi), Assam (Naga Hills, Harmatti).

Genus PALOMENA, Mulsant and Rey.

Pnn. Pent. p. 271, 277 (1866); Stål, En. Hem. v, p. 75 (1876).

Differs from *Peribalus*, Muls., in having the anterior lateral margins of the pronotum neither callous nor smooth: sides of prostethium not, unless very obtusely, elevated: the head is dilated, flat, or somewhat so, towards the apex, lateral margins not, or but very slightly, sinuate; antenniferous tubercles not prominulous beyond the sides of the head.

165. PALOMENA SPINOSA, Distant.

Palomena spinosa, Distant, Trans. Ent. Soc. p. 149, t, 5, f. 3 (1880).

Above green, thickly, darkly and coarsely punctured: head coarsely and somewhat densely punctured; the juga longer than the tylus and cleft at the apex, with the lateral margins slightly reflexed: antennæ with the first three joints green, fourth (except the base) and whole of fifth, brown; second joint longer than the third, 4 and 5 subequal: pronotum coarsely punctured, somewhat sparingly so on the disc, with the lateral angles produced into broad, obtusely pointed spines, somewhat rounded, and narrowly black at the apex; scutellum thickly punctured, more sparingly so at the apex; corium thickly punctured, especially near the costa, membrane brassy, shining: connexivum green, thickly and darkly punctured, narrowly luteous on the outer margin and at the segmental incisures: body beneath pale, disc of abdomen, coxæ, and bases of femora somewhat luteous; legs green, tarsi brown: stigmata marked with black dots: rostrum luteous, with the apex narrowly black (*Dist.*). Allied to *P. angulosa*, Motsch., from Japan, but distinguished by the much produced pronotal angles.

Long 13—14 mill.; breadth angles pronotum, 9—10 mill.

Reported from Sind, N. India.

166. PALOMENA REUTERI, Distant.

Palomena reuteri, Distant, Trans. Ent. Soc. p. 122 (1879); Scien. Res. 2nd Yarkand Mission, p. 4, f. 2 (1879).

♂. Green, with head, anterior border of pronotum, basal half of scutellum and membrane, bronzy: head obscurely rugulose, very thickly and strongly punctured with black; tylus slightly shorter than the juga; rostrum luteous, with the tip black: antennæ luteous, apical joint somewhat fuscous, third joint distinctly longer than the second, rather, shorter than the fourth, fifth longest: pronotum obscurely rugulose, very thickly and strongly punctured with black, with two slightly waved, lateral, linear, impunctate foveæ situated a little behind

the anterior margin; lateral angles somewhat prominent and rounded: scutellum thickly covered with deep black punctures, slightly rugulose at the base: corium thickly and deeply punctured, with the connexivum luteous, punctured with black: body beneath pale luteous, slightly clouded with greenish: legs greenish, tarsi luteous.

♀. Second joint of antennæ distinctly longer than the third; 2 and 4 subequal: abdomen beneath with some irregular obscure black markings (*Distant*). Long, 11—12; breadth angles of pronotum 6—7 mill.

Reported from Murree (Panjáb).

167. PALOMENA AMPLIFICATA, *Distant*.

Palomena amplificata, *Distant*, *Trans. Ent. Soc.* p. 148, t. 5, f. 2 (1880).

Above green, thickly punctured; head densely and finely punctulate, the lateral margins slightly reflexed, juga longer than the tylus and cleft at the apex; pronotum thickly punctate and somewhat rugulose, the lateral margins amplified and rounded, lateral angles obtusely prominent; scutellum thickly punctured, somewhat rugulose: corium with the punctures somewhat finer and more regular; membrane brassy, shining: body beneath paler, disc of abdomen and the coxæ pale luteous; legs green; tarsi brown; connexivum well produced, green, thickly punctured: antennæ green, 4 and 5 joints brown, the last joint with apical half pitchy; second joint longer than the third; 4 and 5 subequal: rostrum pale luteous, with a median dark line, and apex narrowly pitchy (*Distant*). Long, 13—14; breadth of angles of pronotum 8—9; greatest breadth of abdomen, 8—9 mill.

Reported from Shantung (N. China); Assam (?); recognized by the amplified pronotum and the broad ovate body.

168. PALOMENA VIRIDISSIMA, *Poda von Neuhaus*.

Cimex viridissimus, *Poda*, *Ins. Mus. Gr.* p. 56 (1761).

Cimex prasinus, *Fabr.*, *Syst. Ent.*, p. 711 (1775); *Spec. Ins.* ii, p. 354 (1781); *Mant. Ins.*, ii, p. 292 (1787); *Ent. Syst.*, iv, p. 109 (1794); *Syst. Rhyng.*, p. 166 (1803); *Wolff*, *Ic. Cim.*, p. 52, t. 6, f. 49 (1801).

Cimex prasinus, *Fieb.*, *Eur. Hem.*, p. 339 (1861).

Palomena viridissima, *Stål*, *Hem. Fabr.* i, p. 28' (1868); *Muls. and Rey*, *Pun. France*, p. 277 (1866); *Distant*, *Scien. Res.* 2nd *Yar. Miss.*, p. 5 (1879).

Body entirely green, immaculate, last joint of antennæ rufous, fuscous at apex (*C. prasinus*, *Fabr.*). Body ovate, with head, pronotum, hemelytra, scutellum, and feet, green; abdomen above black: antennæ 5-jointed, first joint short, 2 and 3 green, 4 and 5 rufous, last fuscous at apex: eyes small, obscurely fuscous: rostrum 4-jointed, yellow-

greenish, black at apex, as long as half the body: thorax inclined anteriorly, with two small, livid, transverse lines, impressly punctured, margin very thinly ferruginous: scutellum immaculate, subelevated at the base: membrane whitish, with a small fuscous spot at the base at the interior angle: wings white, immaculate: abdomen above black, margin green, spotted fuscous, beneath yellow-greenish: tarsi blackish: first tibiæ with a minute black tooth in the middle (*Wolff*). Varies in size, entire antennæ rufous, beneath green. Long, 14—15 mill.

Stål unites *Cimex dissimilis*, Fabr., with this species, but Puton holds them to be distinct. The former has the 3—4 joints of the antennæ subequal, and the anterior lateral margin of the pronotum very slightly arcuate inside, whilst *P. viridissima* has the third joint of the antennæ from one-third to one-fourth shorter than the second, and the anterior lateral margin of the pronotum very slightly arcuate outside.

Reported from Europe, Murree (Panjab).

Div. CARPOCORARIA.

En. Hem. v, p. 57 (1876).

a. to e. as in *Tropycorypharia*, (p. 19).

f. Furrow of the odoriferous apertures, short or very short, abruptly abbreviated, not continued in a wrinkle or ridge, second joint of the antennæ longer than the third.

Genus CARPOCORIS, Kolenati, Stål.

Mel. Ent. iv, p. 46 (1846): Stål, *Ofvers. K. V.-A., Förh.*, 3, p. 37 (1872).

Stål includes here *Carpocoris*, Muls., *Codophila*, pt. Mulsant, and *Antheminia*, Muls., and arranges the three allied genera thus:—

1—4. Frena not extended beyond the middle of the scutellum.

2—3. Entire anterior lateral margins of the pronotum, or at least anteriorly, reflexed, acutish:—*Carpocoris*.

3—2. Anterior lateral margins of pronotum anteriorly obtuse, not reflexed:—*Codophila*.

4—1. Frena extended beyond the middle of the scutellum:—*Dolycoris* (*q. v.*).

169. CARPOCORIS NIGRICORNIS, Fabr.

Cimex nigricornis, Fabr., Ent. Syst. iv, p. 94 (1794); Syst. Rhyng, p. 157 (1803): Wolf. Ic. Cim. p. 138, t. 14, f. 132 (1804): Fallen, Hem. Suec. p. 27 (1826).

Mormidea nigricornis, Sahlb., Mon. Geoc. Fenn. p. 30 (1848).

Cimex eryngii, Germar, Reise Dalm. p. 283 (1817): Faun. Ins. Eur. ii, 2, (1817).

Pentatoma nigricornis, Hahn, Wanz. Ins. ii, f. 147 (1834).

Carpocoris nigricornis, Kolen., Mel. Ent. iv, p. 40 (1846): Distant, Scien. Res. 2nd Yarkand Miss. p. 5 (1879): Reuter, Ent. Tijds. p. 128 (1880): Duda, Wien. Ent. Zeit. iv, p. 69 (1885).

Head ferruginous or greyish, spines on pronotum always black:

antennæ black; feet pale: pronotum obtusely spinose, somewhat ferruginous (*Fabr.*). Wolff makes the basal joint of the antennæ greyish; head, pronotum, scutellum, hemelytra and feet greyish, impressly punctured; pronotum with four longitudinal lines formed by black points, lateral angles black; margin of abdomen variegated black and greyish; beneath greyish-virescent: tarsi rufescent; first tibiæ with a small tooth. He notes several varieties:—one with head, lateral spines of pronotum and hemelytra purpurascient, pronotum with longitudinal black bands, scutellum virescent, marginal spots on abdomen black with a white pupil; abdomen and pectus greenish; tibiæ rosy, tarsi black at apex. Long $10\frac{1}{2}$; broad, $6\frac{1}{4}$ mill.

Reported from Kugiár, N. W. Siberia, Astrakhan, N. Africa, Europe.

Genus DOLYCORIS, Muls. and Rey.

Carpocoris, subg. *Dolycoris*, Muls. and Rey, Pun. Pent. p. 238 (1866); *Dolycoris*, Stål, Ofvers. K. V.-A. Forh. xxix (3), p. 38 (1872); En. Hem. v, p. 57, 76 (1876).

Body pilose: connexivum in a great part prominulous beyond the hemelytra: lateral margins of the head not, or but slightly, sinuated: antennæ stoutish: anterior lateral margins of pronotum very distinctly and narrowly reflexed: frena extended beyond the middle of the scutellum.

170. DOLYCORIS BACCARUM, Linnæus.

Cimex baccarum, Linn., Faun. Suec. ii, 928, (1761); Syst. Nat. i, p. 721 (1767): Scopoli, Ent. Carn. p. 123 (1763): Fallen, Hem. Suec. p. 29 (1826).

Pentatoma baccarum, pt., Dallas, List Hem. i, p. 235 (1851): Walker, Cat. Het. ii, p. 283 (1867): Sahlb., Mon. Geoc. Fenn. p. 26 (1848): Saunders, Trans. Ent. Soc. p. 125 (1875).

Pentatoma pallida, Dallas, l. c., p. 234 (1851), N. India: Stål, Ofvers., K. V.-A., Förh. p. 497 (1862); Walker, l. c. p. 299 (1867).

Mormidea nigricornis, Fieb. (nec. Fabr.) Eur. Hem. p. 335 (1861).

Carpocoris baccarum, Muls. and Rey, Pun. France Pent., p. 238 (1866); Stål, En. Hem. v, p. 76 (1876).

Dolycoris baccarum, Distant, pt., Res. 2nd Yarkand Miss. p. 5 (1879): J. Sahlb., K. Sv. V.-A., Handl. xvi (4) p. 15 (1879); Reuter, Ent. Tijds. p. 129 (1880); Duda, Wien Ent. Zeit. iv, p. 68 (1885).

Reuter, in 1877 (*Ent. Mon. Mag.* xiv, p. 11), united *Cimex fuscispinus*, Boheman (*K. V.-A.*, Handl., p. 241, 1849), with *C. baccarum*, Linn., but, in 1880 (*Ent. Tijds.*, p. 129), he describes them separately. Linnæus' description of *Cimex baccarum*, in *Faun. Suec.*, is very curt:—'ovate, greyish; margin of abdomen spotted black,' but, in the *Syst. Nat.*, Linnæus quotes Scopoli's description as synonymous. This runs:—

'Pronotum obtusely spinose: abdomen above black; variegated on the margin with spots of the same colour as the apex of the scutellum, beneath 'e basi mucronem supra thoracem protendens.' The apex of the scutellum, spots on the margin of the abdomen and the feet are of the same colour. In ♂, antennæ unicolorous; marginal dots on abdomen yellowish, beneath without dots; varies, (a) in having hemelytra reddish, fuscous at apex, antennæ black, body beneath yellow; or (b), hemelytra æneous-greenish, immaculate at apex, pronotum obscure, apex of scutellum fulvous, abdomen beneath ferruginous, wings obscure. In ♀, the two last joints of the antennæ are flavescent at the base, sides of pronotum obscure, apex of hemelytra punctured fuscous: pronotum and abdomen beneath punctured, black.' It differs from *D. verbasci* in having the angles of the pronotum produced and pointed. Long, 10—12 mill. Dallas describes his *P. pallida* thus:—♀. 'Allied to *Veterna aberrans*, Germar, more elongate, testaceous, punctured: lateral angles of the pronotum somewhat prominent: rostrum hardly reaching the base of the posterior feet, whitish, extremity of apex black: antennæ black, basal joint whitish; tibiæ and tarsi fulvous.' Long, 14 $\frac{3}{4}$ mill.

Reported from all Europe, N. Asia, N. Africa, Japan, Kashmír, India, Oceania.

171. DOLYCORIS VERBASCI, De Géer.

Cimex verbasci, De Géer, Mém. iii, p. 257, t. 14, f. 5 (1773).

Cimex baccharum, Fabr., Ent. Syst. iv, p. 117 (1794); Syst. Rhyng. p. 172 (1803); Wolff, Ic. Cim. p. 60, t. 6, f. 57 (1801).

Pentatoma baccharum, Lep. & Serv., Enc. Méth. x. p. 57 (1825); Hahn, Wanz. Ins. ii, p. 63, t. 50, f. 152 (1834); ? Douglas and Scott, Brit. Hem. p. 80 (1866).

Pentatoma confusa, Westw., Hope, Cat. Hem. i, p. 8 (1837).

Aelia depressa, Westw., l. c. p. 32 (1837); Stål, En. Hem. v, p. 126 (1876).

Pentatoma verbasci, Dallas, List Hem. i, p. 235 (1851).

Mormidea baccharum, Fieb., Eur. Hem. p. 334 (1861).

Dolycoris baccharum, pt, Distant, Scien. Res. 2nd Yarkand Miss. p. 5 (1879); Trans. Ent. Soc. p. 415 (1883).

Dallas and Distant with many others unite *D. baccharum* and *D. verbasci*, and make the two the same as the variable form found commonly throughout the entire region from Siberia to the Sind Valley and thence to North Africa. The question whether these forms are to remain separate or are to be united is entirely one for European students to decide.

Oval: pronotum angular, the lateral angles, rounded at the tip, not pointed: head and pronotum above greyish-brown, sometimes with a slight purplish tint: scutellum triangular, ochreous, with apex sea-green; long, and occupying more than half the length of the abdo-

men : coriaceous portion of the hemelytra with a purplish tint, membrane light-brown with a patch of obscure brown on the interior side, near the coriaceous portion: head, pronotum, scutellum, and hemelytra covered with numerous minute concave black points, hardly visible : wings with a black tint ; eyes obscurely brown : body beneath and feet light grey, a little yellowish, with very numerous black points like those above : abdomen above entirely black with the margin spotted black and white or yellowish : antennæ 5-jointed, shorter than the abdomen, black, with white patches at the joints (*De Géer*). Long, $10\frac{1}{2}$; broad, $6\frac{1}{4}$ mill. Differs from *D. baccarum* in not having the angles of the pronotum produced and pointed, but merely rounded.

Westwood's *Ælia depressa* is thus described :—' Luteous, punctured black : the slight margin of the pronotum pale : sides of scutellum towards the apex, spotted black, apex itself luteous : membrane fuscous, a large internal patch at the base, black : sides of abdomen spotted yellow and black, feet and body beneath luteous, tarsi black.' Long, $10\frac{1}{2}$ mill.

Reported from Puna (Bombay).

172. DOLYCORIS INDICUS, Stål.

Dolycoris indicus, Stål, En. Hem. v. p. 76 (1876).

♀. Very like and closely allied to *D. verbasci*, De Géer, but appears to differ in the narrower form ; head, pronotum, and scutellum less densely punctured ; membrane longer ; anterior lateral margins of pronotum more broadly pallid, sparingly black-punctured at the base (*Stål*). Long, $9\frac{1}{2}$; broad, 5 mill.

Reported from India, Deccan, Darjeeling. Distant has an allied form, *D. formosana*, from Formosa.

Genus CODOPHILA, Mulsant, Stål.

pt. Pun. France Pent. p. 237 (1866) ; Stål, Ofvers. K. V.-A. Förh. xxix, 3. p. 38 (1872) ; En. Hem. v, p. 76 (1876).

Differs from *Carpocoris*, Kolenati, Stål, in having the anterior lateral margins of the pronotum anteriorly obtuse, not reflexed.

173. CODOPHILA MACULICOLLIS, Dallas.

Pentatoma maculicollis, Dallas, List Hem. i, p. 234 (1851) Stål, Ofvers. K. V.-A., Förh. p. 497 (1862) ; Walker, Cat. Het. ii, p. 299 (1867).

Pentatoma arabica, Stål, Ofvers. K. V.-A., Förh. p. 233 (1854).

Codophila maculicollis, Stål, En. Hem. v, p. 76 (1876).

♀. Ovate : head pale yellow, rather thickly punctured, with the lateral margins and two longitudinal lines, united in front, black : eyes

pitchy black; ocelli red; pronotum with the lateral angles somewhat prominent; the anterior portion pale yellow, with four black bands, of which the two lateral run from the anterior to the lateral angles, leaving the lateral margins yellow; the two median do not pass the middle of the disc, and correspond with the two black lines of the head; the posterior portion of the pronotum is blackish, and the whole surface is thickly and rather strongly punctured: scutellum with a large triangular patch at the base, and a large patch on each side, broadest towards the apex, greyish, punctured with black, leaving two lines running from the basal angles, and meeting in the middle of the disc, a short longitudinal line uniting these with the apex, and the apex itself, pale yellow: coriaceous part of the hemelytra flesh colour, irregularly punctured with black; membrane dark brown: margins of the abdomen banded with orange and black, the middle of each segment being orange: body beneath testaceous, shining: abdomen with a small spot on each side of the base of each segment within the stigmata, a similar spot in the middle of the posterior margin of the 5 and 6 segments, a small transverse spot on each side of the disc of the third segment, and the stigmata black: pectus with a few black spots: legs brownish, with the tarsi black: rostrum reaching the base of the abdomen, with the two basal joints testaceous, the two apical black: antennæ black, with the basal joint pitchy (*Dallas*). Long, $15\frac{3}{4}$ mill.

Reported from Arabia, N. India.

Div. DIPLOXYARIA.

En. Hem. v, p. 58 (1876).

a, b, c, as in *Tropyccorypharia* (p. 19).

d.—Head transversely convex, rarely somewhat flat, and, if so, the juga are longer than the tylus and contiguous before it, or the second joint of the antennæ is almost thrice longer than the first, or scarcely extending beyond the apex of the head: juga generally longer than the tylus and contiguous before the tylus: frena rarely slightly extended beyond the middle of the scutellum: furrow of the orifices generally short or very short, rarely continued in a long wrinkle or ridge: first joint of the antennæ not reaching the apex of the head: venter sometimes furrowed.

e.—Posterior angles of the pronotum not lobed: scutellum not amplified behind the frena: head not cylindrical: rostrum not extended behind the pectus, second joint longer than the third: venter not furrowed.

f.—Antennæ alike in both sexes, second joint longer than the first.

Genus ADRIA, Stål.

En. Hem. v, pp. 58, 78 (1876).

Juga and tylus equal, or somewhat so, in length: bucculæ rather elevated throughout their entire length, posteriorly forming a somewhat right angle: second joint of antennæ about on a level with the apex of the head, not, or only a little, longer than the third, the third joint longer than the first: second joint of rostrum equal, or somewhat so, in length to the two apical taken together, the two apical joints of equal length: prostethium broadly furrowed, margins of furrow elevated, somewhat carinate: costal area of corium very narrow anteriorly and furnished with punctures placed in a simple row, costal margin anteriorly rounded.

174. ADRIA PARVULA, Dallas.

Pentatoma parvula, Dallas, List Hem. i, p. 246 (1851); Stål, Ofvers. K. V.-A. Förh. p. 497 (1862).

Adria parvula, Stål, En. Hem. v, p. 78 (1876); Lethierry, An. Mus. Gen. xviii, p. 649 (1883).

♀. Elongate-ovate, testaceous, punctured fuscous; a small whitish spot on both sides of the scutellum at the base; membrane whitish; a longitudinal band of fuscous dots on each side of the abdomen; rostrum short, not reaching the base of the last pair of feet (*Dallas*). Long, 7—7½ mill.

Reported from India, Burma, Senegal.

Genus SCYLAX, Distant.

Trans. Ent. Soc. p. 345 (1887).

Head very large, flat and long; the juga very much longer than the tylus, slightly concave, obtusely pointed at the apex, and in ♀ cleft at the apex, but in ♂ apparently united: lateral angles of the pronotum very strongly produced forwards into robust, obtuse spines which, in the typical species, have their apices parallel to the eyes; anterior margin concave for the reception of the head, anterior angles minute and truncate, posterior margin straight, oblique from the basal angles of the scutellum to the lateral angles; scutellum short and broad, not extending much beyond the base of the membrane; the lateral margins obliquely directed inwardly to about the middle and then straight to near the apex which is broadly rounded; corium short not reaching the apex of the scutellum: membrane with prominent reticulated veins: rostrum long, about reaching the last coxæ: antennæ inserted beneath the head in front of the eyes, the second joint barely reaching the apex of the head (*Dist.*).

175. SCYLAX PORRECTUS, Distant.

Scylax porrectus, Dist., Trans. Ent. Soc. p. 345, t. 12, f. 7 (1887).

Body above ochraceous: head, pronotum, and scutellum somewhat thickly punctate: pronotum with two short transverse and one short median, levigate, longitudinal, linear spots: scutellum with a median, longitudinal, levigate band which has a median row of minute punctures, and a few scattered punctures on each side: costal area of corium very finely and sparingly punctate, the inner area coarsely and somewhat thickly punctate: membrane pale brownish ochraceous: body beneath and legs ochraceous; the body somewhat finely and darkly punctate, and with a median and two sublateral bands formed of blackish punctures: legs speckled brownish: juga divided to near the apex of the tylus: membrane extended to about half the anal appendage: second joint antennæ much shorter than the third: rostrum reaching last coxæ, apex pitchy (*Dist.*). Long, 15 mill.

Reported from India.

176. SCYLAX MACRINUS, Distant.

Scylax macrinus, Dist., Trans. Ent. Soc. p. 346, t. 12, f. 9 (1887).

Closely allied to the preceding; differs in its smaller size, the juga cleft to a short distance only before the head (united in the ♂): membrane not reaching the apex of the last abdominal segment (*Dist.*). Long, 14—15 mill.

Reported from Sikkim (mihi).

Genus ÆSCHROCORIS, Dallas.

Æschrus, List Hem. i, p. 220 (1851): Stål, En. Hem. v, p. 79 (1876): *Æschrocoris*, Bergroth, Ent. Nach., p. 152 (1887).

The name *Æschrus* was given by Spinola (Gen. d'Ins. Artr., p. 136, 1850) to the African genus subsequently named *Rhinocoris*, by Stål, and therefore Dallas' name cannot stand and should give place to *Æschrocoris* as suggested by Bergroth.

Head elongated, with the sides nearly parallel, the apex nearly square, the juga much longer than the tylus and meeting in front of it: eyes rather small, globose; ocelli small, placed near, but a little behind, the eyes: antennæ about as long as the head and pronotum, five-jointed; basal joint short and stout; second not much longer than the first, about half the length of the third; 4 and 5 joints about equal to the third; rostrum long and slender, reaching the base of the abdomen; basal joint shortest, not passing the base of the head; second longest: 3 and 4 about equal: body short and broad: pronotum with the lateral

angles produced into stout, somewhat cylindrical processes, directed forwards and upwards, with the apex emarginate and deflexed: scutellum reaching beyond the middle of the body; the apex broad with a tubercle in its middle: membrane with irregularly reticulated veins: body beneath very convex; abdomen and sternum unarmed; the lateral margins of the former with a small tubercle at the posterior angle of each segment: legs long, especially the posterior; tarsi of three joints, with the basal joint as long as the apical (*Dallas*).

177. *ÆSCHROCORIS OBSCURUS*, Dallas.

Æschrus obscurus, Dallas, List. Hem. i, p. 221, t. 8, f. 4 (1851); Walker, Cat. Het. ii, p. 268 (1867); Stål, En. Hem. v, p. 79 (1876).

♂. Head black, tinted with coppery or violet, somewhat shining, thickly punctured, with two short, longitudinal, parallel ridges on the middle of the vertex, and a similar ridge on the tylus: eyes black: pronotum pale brown, punctured with black and rugose, with an elevated line down the middle; the tips of the lateral processes are black: scutellum of the same colour as the pronotum with a large black pit in each basal angle; apical tubercle black; coriaceous portion of the hemelytra of the same colour and texture; membrane brownish: body beneath black, coarsely punctured rugose, with scattered brown elevations; lateral tubercles of the abdomen brown; pronotal processes black, tinted with coppery: legs brown; femora covered with fine black punctures, with the base, the inside, the apex of the outside, and a ring before the apex, black; tibiæ with the base and a ring about the middle black: rostrum and antennæ brown; the latter becoming darker towards the apex (*Dallas*). Long, $8\frac{1}{2}$; breadth of pronotum, $8\frac{1}{2}$ mill.

Reported from Java, India.

178. *ÆSCHROCORIS TUBERCULATUS*, Stål.

Æschrus tuberculatus, Stål, A. S. E. F. (4 s.) v, p. 169 (1865); En. Hem. v, p. 79 (1876).

♂. Pale fuscous-ferruginous, strongly punctured in patches; head and pronotum anteriorly fuscous-cupreous; venter brassy-black on the disc; femora brassy-black, a median ring on the femora, the tibiæ, and antennæ yellow-testaceous; tibiæ black at the base, ringed fuscous in the middle: pronotum bituberculate on the disc. Close to *Æ. obscurus*, Dallas, differs in the short head, disc of pronotum bituberculate and lateral horns shorter: pronotum furnished with a median longitudinal ridge and others transverse behind the middle; lateral angles produced

in a horn inclining somewhat forwards, emarginate at the apex, furnished anteriorly with a small tubercle in the middle, shorter than the head: scutellum terminated at the apex by a concolorous tubercle, a little elevated (*Stål*). Long, $7\frac{1}{2}$; broad, 5 mill.

Reported from India: taken in Sikkim.

Genus *ÆLIOMORPHA*, Stål.

Ofvers. K. V.-A. Förh. p. 313 (1858); Hem. Afric. i, p. 173 (1864); En. Hem. v, p. 58, 79 (1876). Includes *Tetratoma*, Signoret, A. S. E. F. (2 s.) ix, p. 339 (1851).

Body ovate or obovate, beneath moderately convex: head produced, narrowed forwards, rather convex, lateral margins obtuse, tylus and juga equal, or somewhat so, in length, juga acuminate at the apex: bucculæ continued through, moderately elevated: antennæ different in each sex; in ♂, somewhat stout, second joint very short, somewhat annuliform, obsolete; in ♀, slender, second joint elongate, much shorter than the third, basal joint not reaching the apex of the head: rostrum moderate, first joint on a level with the bucculæ posteriorly, second somewhat shorter or just equal to the two apical taken together: lateral margins of pronotum somewhat obtuse: frena reaching or scarcely reaching to the middle of the scutellum, rarely extending beyond the middle: apical angles of the last segment of the abdomen somewhat straight: feet moderate, tibiæ furrowed above or flattish (*Stål*). Signoret's name was previously given to a genus of Coleoptera.

179. *ÆLIOMORPHA LINEATICOLLIS*, Westwood.

Pentatoma lineatocollis, Westwood, Hope, Cat. Hem. i, p. 36 (1837).

Æliomorpha lineaticollis, Stål, En. Hem. v, p. 80 (1876).

Greyish-luteous, much punctured with fuscous; head and pronotum with a more or less distinct pale longitudinal line; scutellum paler; head with a conical disc, a little fuscous; a broad stripe at the middle of the internal margin of the hemelytra, infuscate; antennæ fuscous; abdomen, beneath, smooth in the middle, punctured on the sides; posterior angles of pronotum hardly prominent (*Westw.*). Long, $6\frac{1}{4}$ mill.

Reported from Bengal.

Div. EYSARCORIARIA.

En. Hem. v, p. 59 (1876).

a. as in *Odiaria* (p. 17).

b.—Costal area of corium anteriorly strongly narrowed and furnished there with punctures generally arranged in a rather regular

single row; costal margin anteriorly obtusish or somewhat so, generally pale, levigate and somewhat callous: juga and tylus of equal length, the juga very rarely a little longer than the tylus, always altogether distant, never acuminate: head generally rather bending forwards, pronotum rather inclined before the middle; anterior lateral margins, at least before the middle, rounded or somewhat so, generally callous and levigate: lateral angles of pronotum usually prominulous: basal angles of the scutellum generally marked by a pale, levigate, callous, often large, spot or streak: body beneath generally rather convex: orifices subauricularly margined or extended in a short furrow, abruptly abbreviated, not continued in a wrinkle or ridge, having the margin elevated: tibiæ somewhat slender, rounded, or above slightly sulcated, or somewhat flattish: second joint of the rostrum reaching the first coxæ or the base of the mesostethium, not, or a little longer, or shorter, than the two apical joints taken together, these equal in length or somewhat so: almost entire second joint of the antennæ extending beyond the apex of the head: body small.

Genus STOLLIA, Ellenrieder.

Nat. Tidsskr. Ned. Ind. xxiv, p. 149 (1862); Stål, Ofvers. K. V.-A. Förh. p. 510 (1867): En. Hem. v, p. 59, 81 (1876).

Body short; length of body equal to $1\frac{1}{2}$ time the breadth of the pronotum; head much inclined; tylus long, juga anteriorly gradually narrowed externally up to the interior apical angle which is somewhat straight or acutish; eyes globulose, small, very prominent; ocelli small: first joint of the antennæ shorter than the head, 2-5 joints almost of equal length, last two more robust: rostrum reaching the second segment of the abdomen: anterior margin of pronotum narrower than the head; lateral margin almost entire, 2-3 small teeth anteriorly being hardly visible; posterior angles broader than the abdomen, more prominent in the ♂, and mucronate or acuminate: pronotum much declined before the line between the posterior angles: scutellum broad, long, covering three-fourths of the abdomen, its posterior angle very broadly rounded: coriaceous part of hemelytra longer than the membrane which has a few veins, sometimes branched: abdomen short, almost orbicular, extending at the sides a little beyond the hemelytra, posteriorly scarcely shorter than them: venter subglobulose, usually shining black, within the callous and levigate lateral margins, finely impressed, margin pale: ventral furrow in the first segment, short but deep: feet weak, sparingly ciliated, punctulate black (*Ellenr.*). The species of this genus appear to be numerous and to require revision.

180. *STOLLIA GUTTIGERA*, Thunberg.

Cimer guttigerus, Thunb., Nov. Ins. Spec. ii, p. 32, t. 2, f. 47 (1783).

Pentatoma nepalensis, Westw., Hope Cat. Hem. i, p. 36 (1837); Stål, En. Hem. v, p. 126 (1876).

Pentatoma punctipes, Westw., l. c. p. 36 (1837); Stål, l. c. p. 126 (1876).

Eysarcoris guttigerus, Dallas, List Hem. i, p. 228 (1851); Walker, Cat. Het., ii, p. 275 (1867).

Eysarcoris nepalensis, Leth., Ann. Mus. Civ. Gen. xviii, p. 649 (1883).

Stollia guttigera, Stål, En. Hem. v, p. 81 (1876); Scott, A. M. N. H. (4 s.) xiv, p. 290 (1874); Distant, l. c. (5 s.), iii, p. 45 (1879); Scott, Trans. Ent. Soc. p. 305 (1880); Distant, l. c., p. 415 (1883).

Obscurely luteous, tinted bronze, punctured black: pronotum broad posteriorly, the posterior angles prominent, obtuse; anteriorly with two small, smooth, black, lunules: scutellum at the base with two large, distant, white spots: pronotum beneath tinted cupreous: abdomen black, margin luteous (*P. nepalensis*, Westw.). Long $5\frac{1}{4}$ mill. *P. punctipes*, Westw., is described as very like *P. nepalensis*, or, perhaps, only a local variety; a little larger, angles of pronotum less produced and the colour more metallic, Long $6\frac{1}{4}$ mill. Nearly allied to *S. bovilla*, Dallas, from the Philippines, differs in having the lateral angles of the pronotum less prominent, and the callous wrinkle on the lateral margins finer: ventral limbus yellow.

Reported from Japan, China, Burma, Assam, Nepal: common in Sikkim and Assam (mihi).

181. *STOLLIA FULIGINOSA*, Ellenr.

Stollia fuliginosa, Ellenr., Nat. Tidsskr. Ned. Ind. xxiv, p. 150, f. 18 (1862); Walker, Cat. Het. ii, p. 235 (1876); Stål, En. Hem. v, p. 81 (1876).

♂. Ochraceous-brunneous, so closely punctulate black as to appear fuliginous: posterior inter-angular band on pronotum, lateral bands on scutellum, and some scattered spots, more obscure: two small spots, and a transverse waved line on pronotum and spots on lateral angles of the scutellum, luteous: lateral margins of the abdomen extending slightly beyond the hemelytra, luteous, spotted black: membrane opaque, blackish; venter beneath shining black; broad margin, luteous, stigmata black, last tibiæ somewhat curved at the base (*Ellenr.*) Long, 7—8 mill.

Reported from Sumatra, Java, Malacca.

182. *STOLLIA RUGULOSA*, Walker.

Eysarcoris rugulosus, Walker, Cat. Het. ii, p. 276 (1867).

Aeneous-lurid, oval, rather roughly punctured; beneath bright æneous, smooth, shining: head elongate; juga and tylus of equal

length; lateral margins slightly reflexed; rostrum tawny, extending to the hind coxæ, apex black: antennæ black, minutely setulose, less than half the length of the body; joints successively increasing in length; first not extending to the front of the head: pronotum with two slight transverse ridges: scutellum with two slight grooves converging from the sides of the fore border to the middle of the disc: legs tawny, short, stout, black-speckled: membrane brown (*Walker*). Body long, $5\frac{1}{4}$ mill.

Reported from Cachár (Assam): nearly allied to *S. bovilla*, Dallas, and to *S. insularis*, Dallas.

183. STOLLIA DUBIA, Dallas.

Eysarcoris dubius, Dallas, List Hem. i, p. 227 (1851): A. Dohrn, Stettin Ent. Zeit., xxi, p. 400 (1860): Walker, Cat. Het. ii, p. 275 (1867).

Stollia dubia, Stål, En. Hem. v, p. 82 (1876).

♀. Above greyish, thickly and finely punctured with black: head blackish, tinted with brassy green: pronotum with the lateral margins very slightly indented, the lateral angles somewhat prominent; the anterior margin blackish, tinged with brassy: scutellum more thickly punctured and consequently darker in colour than the pronotum, with a small impunctate spot in each basal angle: membrane brownish, semi-transparent, with the veins darker: abdomen above black, beneath brassy black, very smooth and shining, with the disc impunctate, the sides thickly and finely punctured, the margins testaceous, with a row of black spots on the extreme edge: pectus brownish, very thickly and finely punctured with black: legs testaceous; femora and tibiæ with numerous brown points: rostrum testaceous, with the apex black: antennæ testaceous, with the 2-3 joints about equal (*Dallas*). Long, $6\frac{1}{2}$ —7 mill.

Reported from Tenasserim. Dohrn notes that a Ceylon variety has the rostrum not only at the apex, but with a median longitudinal line on two last joints, black.

184. STOLLIA DISTACTA, Dallas.

Eysarcoris distacta, Dallas, List Hem. i, p. 226 (1851): Walker, Cat. Het. ii, p. 279 (1867).

Stollia rectipes, Ellenr., Nat. Tijds. Ned. Ind., xxiv, p. 150, f. 19 (1862): Walker, l. c. p. 279.

Stollia distacta, Stål, En. Hem. v, p. 82 (1876).

♀. Above greyish testaceous, rather thickly and finely punctured with brown: head black, slightly brassy; eyes black, ocelli red: anterior lateral margins of pronotum straight, the lateral angles not pro-

minent, anterior portion much paler than the posterior, with a transverse brassy black spot behind each anterior angle: scutellum with a yellow impunctate spot in each basal angle: membrane transparent, nearly colourless, veins slightly tinged brown and the inner basal angle immaculate: disc of abdomen beneath, deep brassy brown or black, the sides thickly and finely punctured, the middle impunctate, the margins broadly testaceous, thickly and finely punctured brown: pectus testaceous, so thickly covered with brown punctures as to appear nearly brown: legs pale testaceous, femora with numerous brown points: rostrum testaceous, apex black: antennæ pale testaceous with the apical joints brownish; second joint distinctly longer than the third (*Dallas*). Long, $6\frac{1}{4}$ mill.

Reported from Java, Sumatra, Philippines, Calcutta (mihi).

Genus EYSARCORIS, Hahn.

Wanz. Ins. ii, p. 66 (1834); Kolen., Melet. Ent. iv, p. 32 (1846) *Dallas*, List Hem. i, p. 224 (1851): *Eusarcocoris*, Fieber, Eur. Hem. p. 79, 331 (1861): *Pentatoma*, subg., *Eysarcocoris*, Stål, Hem. Afric. i, p. 135 (1864).

Body obovate, very often broad, beneath very convex: head deflexed, rounded at the apex, tylus reaching the apex; bucculæ continued through, rather elevated: antennæ moderate, first joint about on a level with the apex of the head, 2 and 3 joints varying in length: second joint of rostrum as long as, or a little longer than, the two apical joints taken together: pronotum rather declined anteriorly, anterior lateral margins obtuse, slightly callous, entire: scutellum broad posteriorly, somewhat longer than broad at the base; frena not extended to the middle of the scutellum: feet moderate, femora unarmed at the apex; tibiæ above, not, or only obsoletely, furrowed (*Stål*).

185. EYSARCORIS (?) VENTRALIS, Westwood.

Pentatoma ventralis, Westw., nec *Dallas*, Hope, Cat. Hem. i, p. 36 (1837); *Stål*, En. Hem. v, p. 126 (1876).

Pentatoma pallicornis, Westw., l. c. p. 8 (1837).

Pale luteous, very much punctured, black: head and pronotum anteriorly, blackish: scutellum with two distinct, round, whitish spots at the base: body beneath, antennæ and feet, concolorous: abdomen with a large black patch in the middle (*Westw.*). Long $6\frac{1}{4}$ mill.

Reported from Bengal.

186. EYSARCORIS INCONSPICUUS, Herrich Schäffer.

Pentatoma inconspicuum, Herr. Schöff. (nec Dallas), Wanz. Ins. vii, p. 93 (1844); ix, p. 155 (1853).

Eysarcoris misellus, Stål, Ofvers. K. V.-A. Förh., p. 217 (1853).

Pentatoma (Eysarcocoris) misella, Stål, Hem. Afric. i, p. 135 (1864).

Analocus misellus, Stål, Ofvers. K. V.-A. Förh. 3, p. 36 (1872).

Stollia misella, Stål, En. Hem. v, p. 82 (1876).

Eysarcoris inconspicuus, Reuter, Ofvers. Finska Förh. xxv, p. 6 (1883).

Var. *simplex*, Puton, Hém. Het. France ii, p. 55 (1881); B. S. E. F. (6 s.) i, p. ix, (1881).

Var. *mayeti*, Muls., sec. Puton, l. c.

♂, ♀. Somewhat broadly obovate, pale greyish-stramineous, punctured fuscous: head, two anterior spots on pronotum, also a very large median streak running longitudinally, narrowed hindwards, occupying more than one-third of the venter, fuscous-æneous: head very often with a pale, fuscous punctured streak; a minute, smooth, marginal, subcallous, pale spot at the eyes: lateral and anterior margins of pronotum, also small spot on levigate, callous, basal angles of scutellum, pale: very minute marginal spots on venter, black: first joint of rostrum, not, or scarcely, extending beyond the bucculæ, second joint a little longer than the two apical taken together: venter sometimes with an obsolete, lateral, aenescent-fuscous streak: third joint of the antennæ a little shorter than the second (*Stål*). Long $4\frac{1}{2}$ — $5\frac{2}{3}$; broad, 3—4 mill.

Reported from Cape of Good Hope, N. Africa, S. Europe, India, Philippines. Antennæ sometimes fuscous towards the apex.

187. EYSARCORIS (?) MEGASPILUS, Walker.

Eysarcoris megaspilus, Walker, Cat. Het. ii, p. 276 (1867).

Tawny, shining, convex, short-elliptical, minutely punctured; punctures black: head black with several longitudinal tawny streaks; lobes of equal length: rostrum tawny, extending to the hind coxæ; apex black: antennæ tawny, piceous towards the tips, less than half the length of the body; joints successively increasing in length; first not extending to the front of the head: pronotum black; with a few tawny speckles and with a tawny disc: scutellum with a very large luteous spot on each side at the base, and with a luteous crescent-shaped apical mark, which is notched in the middle: pectus and underside of abdomen with four irregular and interrupted luteous stripes; a luteous ridge between the middle coxæ and the hind coxæ: legs luteous, short, stout; femora with an irregular black band beyond the middle: hemelytra with two

or three blackish patches; membrane pale cinereous (*Walker*). Body long, 4—5 $\frac{1}{4}$ mill.

Reported from N. China, Hong-Kong, Assam (?).

188. EYSARCORIS (?) INSOCIUS, Walker.

Eysarcoris insocius, Walker, Cat. Het. iii, p. 556, (1868).

Dull testaceous, elliptical, thickly and minutely brown punctured: head large, slightly obtuse in front; juga and tylus of equal length: eyes piceous, prominent: rostrum extending to the hind coxæ; apex black: antennæ pale-testaceous; first joint not extending to the front of the head; second a little longer than the third; fourth much longer than the third; fifth partly piceous, longer than the fourth: pronotum with two irregular smooth transverse lines, of which the fore one is much more undulating than the hind one; the latter is between the hind angles, which are prominent and much rounded; sides slightly serrated in front; scutellum with a less thickly punctured stripe extending from the middle to the tip, which is much rounded, a small pale testaceous callus on each side at the base: abdomen beneath with three black stripes; the lateral pair irregular and incomplete; the middle one not extending to the tip, dilated towards the base, where it includes a testaceous spot; tip emarginate: femora with three small black dots near the apex; tibiæ very minutely black-speckled; membrane cinereous; veins few, brown; no transverse veinlets. Var.—Stripes of the abdomen nearly obsolete (*Walker*). Body long, 6 $\frac{1}{2}$ —7 $\frac{1}{2}$ mill.

Reported from India.

Genus CARBULA, Stål.

Pentatoma, subg. *Carbula*, Stål, Hem. Afric. i, p. 140 (1864); *Carbula*, En. Hem. v, p. 60, 82 (1876).

Body broadly oval or obovate, beneath very convex: head rounded or subtruncated at the apex: the juga and tylus somewhat equal in length, the former obtuse, lateral margins somewhat obtuse, bucculæ moderately elevated, reaching base of the head; antenniferous tubercles partly visible from above: rostrum moderate, the first joint equal to, or extending a little beyond, the bucculæ posteriorly; second joint somewhat equal to, or a little longer, than the apical two taken together: antennæ moderate or somewhat long, first joint not reaching the apex of the head; second joint rarely a little longer than the third: anterior lateral margins of pronotum very often very obtuse; never acute; terminated by a smooth wrinkle or ridge, (which itself is sometimes transversely rugulose), rarely anteriorly crenulated: scutellum triangular,

somewhat short, a little longer than broad at the base; frena extended a little beyond the middle: hemelytra a little narrower than the abdomen; membrane with simple veins: apical angles of the last segment of the abdomen very often obtuse, rarely produced in a small spine: feet moderate, somewhat slender, tibiae above slightly furrowed (*Stål*).

189. CARBULA BIGUTTATA, Fabricius.

Cimex 2-guttatus, Fabr., Ent. Syst., iv, p. 129 (1794).

Cimex 2-notatus, Fabr., Syst. Rhyng. p. 165 (1803).

Carbula biguttata, Stål, Hem. Fabr. i, p. 25 (1868); En. Hem. v, p. 83 (1876).

♀. Obovate, stramineous: above rather densely, below remotely, distinctly punctured ferruginous fuscous; anterior lateral margins of pronotum flavescent; a moderate, smooth, callous, shining spot on the basal angles, and the extreme apical margin of the scutellum, stramineous: membrane sordid hyaline, veins fuscous: lateral angles of pronotum, basal and apical margins of the segments of the connexivum, extremity of basal and the apical angles of the segments, and a very broad streak on the venter, narrowed hindwards, black: feet very finely and remotely sprinkled with black; 2—3 small black spots near the apex of the posterior femora (*Stål*). Long, 8; broad, 5 mill.

Very closely allied to *C. abdominalis*, Sign. Head flat, juga and tylus equally long, the former subrotundate at the apex, lateral margins parallel before the sinus: 2 and 3 joints of the antennae equally long: pronotum with the lateral angles, very acute, moderately produced outwards, obsolete pallescent at the extreme apex, anterior lateral margins very slightly sinuate, slightly reflexed, anteriorly very obsolete-ly crenulated; apical angles of the sixth abdominal segment, obtuse.

Reported from India.

190. CARBULA (?) OBSCURA, Westwood.

Pentatoma obscura, Westw., Hope, Cat, Hem. i, p. 35 (1837).

Pentatoma bimaculata, Westw., l. c., p. 8 (1837).

Carbula ? obscura, Stål, En. Hem. v, p. 126 (1876).

Fuscous-luteous, punctured black; posterior angles of pronotum prominulous, subacute, black; lateral margin of pronotum anteriorly pallid; scutellum with two distant, white spots at the base: antennae and feet luteous, punctured fuscous (*Westw.*). Long, 7½ mill.

Reported from India.

191. CARBULA FUSCA, Distant.

Carbula fusca, Dist., Trans. Ent. Soc., p. 346 (1887).

Above shining fuscous-brown: head somewhat thickly covered

with bronzy-green punctures; eyes luteous; antennæ brown, the last joint with the apical two-thirds blackish: pronotum with the anterior area and lateral margins punctured bronzy-green, remaining area coarsely punctate, lateral angles prominently and obtusely produced, their apices reddish-brown: scutellum coarsely punctate, sometimes slightly shaded bronzy-green: corium coarsely punctate: membrane pale hyaline: body beneath, rostrum and legs brown, the abdomen paler, with a broad, median, blackish band, on each side of which is a narrower and more irregular band of the same colour, and between these bands are scattered dark punctures: femora punctured or speckled with blackish: head beneath and sternum coarsely and darkly punctate: mesostethium with a large irregular luteous spot on each side: rostrum reaching third abdominal segment: 2-3 joints of antennæ subequal in length, and much shorter than the fourth; 4-5 joints subequal in length, the fifth moderately incrassate (*Dist.*). Long 7-8: exp. angl. pron. 5-6 mill.

Reported from Nepal, Sikkim (mihi), where it is very common.

192. CARBULA SCUTELLATA, Distant.

Carbula scutellata, *Dist.*, *Trans. Ent. Soc.* p. 347 (1887).

Head luteous, covered with coarse black punctures; eyes fuscous; ocelli red; antennæ luteous, infusate at the apex; 4-5 joints subequal in length; rostrum extending just beyond last coxæ: pronotum luteous, coarsely and darkly punctate, the lateral margins levigate, the lateral angles produced into long, acute, black spines: scutellum luteous, sparingly and coarsely darkly punctate, a large levigate spot at each basal angle, apex also broadly impunctate, punctures usually thickest at the lateral margins and sometimes at the base: corium luteous with a purplish tinge, thickly and darkly punctate: membrane pale hyaline: connexivum luteous, with black segmental, marginal spots: body beneath and legs luteous, with a few scattered black punctures on the disc and on the femora, and the margins and apices of the pronotal angles black (*Dist.*). Long, 8; exp. angl. pron. $5\frac{1}{2}$ mill.

Reported from Bombay, N. Khasiya Hills (Assam).

Genus GYENICA, Dallas.

List Hem. i, p. 180 (1851); *Walker, Cat. Het.* i, p. 217 (1867); *Stål, En. Hem.* v, p. 83 (1876).

Body elongate-ovate: head elongate, tapering gradually to the apex; tylus reaching the apex; eyes not prominent; ocelli minute, placed close to the eyes; antennæ inserted in front of the eyes, basal joint short, not reaching the apex of the head, 2-3 joints about equal;

rostrum inserted in front of the antenniferous tubercles, reaching the base of the abdomen, basal joint reaching the base of the head, second joint longest, as long as 3-4 together, 3-4 joints about equal: lateral angles of pronotum produced into strong, acute spines, directed forwards and upwards: scutellum triangular, not extending beyond the middle of the abdomen: membrane with longitudinal veins: abdomen with a weak longitudinal furrow, apex produced and pointed (♀), vulvar plates narrow and acute: legs moderate: tarsi 3-jointed, basal joint longest (*Dallas*).

193. GYENENICA MARGINELLA, Dallas.

Gyenenica marginella, Dallas, List Hem. i, p. 181, t. 6, f. 4 (1851); Walker, Cat. Het. i, p. 217 (1867); Stål, En. Hem., v, p. 83 (1876).

Above brown, thickly and finely punctured black, more strongly on the scutellum: head with a median, longitudinal, fulvous line: thorax with a transverse yellow band before the middle, and the lateral spines black: lateral margins of scutellum yellow, impunctate, with a line of coarse, black, punctures close to the margin, apex yellow, finely punctured black: outer margin of corium yellow, coarsely punctured black; membrane transparent: margin of the abdomen fulvous, tinged with green; pectus fulvous, tinged with green and thickly and finely punctured: legs fulvous, apex of each tibiæ and the tarsi, black: rostrum testaceous, apex black: antennæ ferruginous (*Dallas*). Long, $13\frac{2}{3}$ mill.

Locality unknown: Africa (?).

194. GYENENICA AFFINIS, Distant.

Gyenenica affinis, Dist., Ent. Mon. Mag. xvi, p. 202 (1880).

Above brown, thickly and coarsely punctured: head thickly punctured black, with a median, fulvous longitudinal line, broadest at the base; tylus reaching apex of the head, a little shorter than the juga; antennæ fuscous, basal joint not reaching apex of the head, second slightly shorter than the third, fourth longest, 5 and 3 subequal: posterior half of pronotum thickly punctured black, anterior portion fulvous, lateral angles produced into strong, acute, black spines, slightly directed forwards: scutellum fulvous, sparingly covered with black punctures, except at the base, where there is a large median, black, coarsely punctured spot: corium concolorous with posterior part of the pronotum, very thickly punctured black; membrane fuscous: body beneath luteous, thickly and finely punctured, slightly tinged with green: legs fulvous: rostrum greenish, apex black. Allied to preceding,

differs in the shorter head, and tylus not extending beyond the juga the pronotal spines are smaller and not directed upwards, the scutellum is of another colour (*Dist.*). Long, 10; exp. pron. angl., 6 mill.

Reported from Bombay, Calcutta (mihi).

Genus CRATONOTUS, Distant.

A. M. N. H. (5 s.) iii, p. 50 (1879).

Head broad and elongated; ocular part broadest, with the lateral edges somewhat sinuated about the middle; tylus shorter than the juga; eyes prominent; ocelli situated rather nearer the eyes than to each other: antennæ longer than the head and pronotum, five jointed; second joint slightly shorter than the third, fourth longest: rostrum robust, just passing the posterior coxæ; second joint longer than the third, apical joint shortest: pronotum twice as wide as long, raised and rounded at the base, deflexed in front, angles obtusely prominent; lateral margins deeply sinuated, with their anterior portion crenulated: scutellum reaching a little beyond the base of membrane, gradually narrowed for two-thirds its length from the base, when it is straightened to apex, which is moderately broad and rounded; width at base about equal to length: membrane with longitudinal veins: abdomen widened above, projecting a little on each side, convex beneath, abdomen and sternum unarmed: legs moderately long, tibiæ sulcated (*Distant*). This genus is near *Durnia*, Stål.

195. CRATONOTUS COLORATUS, Distant.

Cratonotus coloratus, Distant, A. M. N. H. (5 s.) iii, p. 50 (1879).

Brown, somewhat shining, thickly punctured with black; head black, thickly punctured; eyes black, with their bases luteous; antennæ luteous; rostrum brownish; pronotum with the basal half rugulose and very coarsely punctured, lateral margins narrowly luteous, pronotal angles pitchy: scutellum transversely rugulose, with a large irregular patch, at base and apex, broadly luteous; membrane pitchy, shining: margins of abdomen above, and body beneath, luteous, the last with a broad green stripe on each side, extending narrowly along on each side of head, widened at anterior coxæ, and extending to about the base of the fifth abdominal segment; two obscure marks on the disc and a sub-apical spot pitchy: legs luteous; apices of femora and tibiæ black, anterior tibiæ punctured with black; tarsi black. Other structural characters as in generic diagnosis above (*Distant*). Long, 19; breadth of angles of pronotum, 11 mill.

Reported from N. Khasiya hills, 1,500—3,000 feet (Assam), Sikkim (mihi).

Tibiæ rounded, without a furrow; see p. 16.

Genus AGONOSCELIS, Spinola.

Ess. p. 327 (1837); Dallas, List Hem. i, p. 179 (1851); Stål, Hem. Afric. i, p. 177 (1864); En. Hem. v, p. 84 (1876).

Includes *Neuroscia*, Am. & Serv., Hist. Nat. Ins. Hém. p. 109 (1843).

Body remotely pilose, oval: head very often somewhat long, gradually narrowed forwards, rounded at apex, entire; juga and tylus of equal length: bucculæ continued through, distinctly elevated: rostrum long, or somewhat so, first joint reaching base of the head: anterior lateral margins of pronotum entire, somewhat acute, straight; anterior margin, in the middle at least, somewhat callous: scutellum triangular, rather narrowed at apex, frena extended a little beyond the middle: hemelytra somewhat narrower than the abdomen and much longer: veins of membrane simple: mesostethium slightly carinate: venter sometimes, obsoletely somewhat sulcate: feet moderate; tibiæ cylindrical, not sulcate above (*Stål*).

196. AGONOSCELIS NUBILA, Fabricius.

Cimex nubilus, Fabr., Syst. Ent. p. 712 (1775); Spec. Ins. ii, p. 355 (1781); Mant. Ins. ii, p. 293 (1787); Ent. Syst. iv, p. 112 (1794), Cape: Wolff, Ic. Cim. ii, p. 57, t. 6, f. 54 (1801), India.

Halys nubila, Fabr., Syst. Rhyng. p. 183 (1803): Stoll, Funaises, p. 161, t. 40, f. 290? (1788), India.

Pentatoma grata, Palis. Beauv., Ins. p. 129, Hém, t. 9, f. 5 (1805).

Ælia? *nubila*, Hahn, Wanz. Ins. iii, p. 29, t. 82, f. 251 (1835).

Agonoscelis indica, Spinola, Ess. p. 329 (1837).

Var. *Ælia crucifera*, Westwood, Hope, Cat. Hem. i, p. 32 (1837). Cape, Java.

Var. *Agonoscelis femoralis*, Walker, Cat. Het. iii, p. 545 (1868). N. India, Banda.

Neuroscia grata, Am. and Serv., Hist. Nat. Ins. Hém. p. 109 (1843). St. Domingo?

Neuroscia sulciventris, Ellenr., Nat. Tijds. v. Ned. Ind. xxiv, p. 144, f. 11 (1862). Sumatra.

Agonoscelis nubila, Dallas, List Hem. i, p. 179 (1851); Uhler, Proc. Ac. Phil. p. 223 (1860), Japan. Walker, l. c. i, p. 217 (1867); Stål, En. Hem. v, p. 85 (1876); Scott, A. M. N. H. (4 s.) xiv, p. 290 (1874); Distant, l. c. (5 s.), iii, p. 45 (1879).

Small, greyish varied with black: antennæ altogether black; head greyish with four black lines: pronotum, greyish, irrorated with black, dorsal line immaculate: scutellum black at the base, with a median line and apex, greyish: hemelytra variegated, a median rufescent patch: wings white with black lines: beneath, glaucous, punctured black, margin of abdomen rufescent (*Fabr.*). *N. grata*, Am. & Serv. (*l. c.*) is thus described: ♂, ♀ yellowish, spotted black; head yellow with four black longitudinal lines above: pronotum yellow, with some reddish tints, punctured black: scutellum yellowish, punctured black, its tip of a light yellow or reddish: corium reddish yellow, with small, black,

irregular, transverse lines; the membrane extending rather beyond the end of the abdomen, white, transparent; veins deep brown: body beneath yellow with two black spots on each side, on each ventral segment: feet yellow, femora with several black dots, tarsi brown: antennæ brown. Long, 10-12 mill.

Reported from the Philippines, Java, Malacca, India, China, Japan. The Indian Museum has specimens from Arakan, Calcutta (mihi) Assam, Mysore, and China. Walker's variety '*femorialis*' appears to be as much entitled to specific rank as many others. It is found with the ordinary form in Sikkim, Assam and Burma, and I have recently had it from the Karen Hills near Tounghoo.

Group B. See p. 16.

En. Hem. v, p. 60 (1876).

Includes those genera which have either the second ventral segment produced anteriorly in a spine, or tuberculated; or the venter furnished with a levigate, obtusely round, longitudinal, and sometimes furrowed, ridge; or having the anterior and anterior-lateral margins of the pronotum, or, at least the anterior, distinctly elevated, levigate or callous; or the pronotum anteriorly levigate, or sparingly punctured, and, within the anterior margin, punctured in regular or somewhat regular rows; or the odoriferous apertures are immarginate outwards, or continued in a furrow open at the apex: the entire second joint of the antennæ, or a great part of it, extending beyond the apex of the head.

Div. STRACHIARIA, Stål.

Stål, *Ofvers. K. V.-A., Förh.* (3), p. 39 (1872); En. Hem. v, p. 60 (1876).

The odoriferous apertures placed between or near the posterior acetabula, often obsolete, sometimes having the appearance of a small fissure, anterior and posterior margins, sometimes slightly elevated and continued in two parallel or gradually diverging wrinkles or ridges, gradually evanescent, terminating in a furrow, linear, or gradually amplified, open at the apex: evaporative area wanting or obsolete: lateral margins of the head reflexed: base of venter unarmed.

Genus AGÆUS, Dallas.

List Hem. B. M. i, p. 185 (1851); Walker, *Cat. Het.* i, p. 229 (1867); Stål, *Ofvers. K. V.-A., Förh.* p. 519 (1867); En. Hem. p. 60, 85 (1876).

Body elongate-ovate: head elongate, longer than broad, the sides

slightly sinuate, nearly parallel, apex pointed: tylus prominulous before the juga which are not, or only very slightly, convergent, anteriorly and posteriorly equally distant, or somewhat so: antennæ inserted a little before the eyes, about half as long as the body, slender, 5-jointed; basal joint short and stout, not reaching nearly the apex of the head; the second joint about twice the length of the first; the third and the fourth nearly equal in length, longer than the second; the fifth a little shorter than the second: rostrum long, slender, reaching behind the last coxæ, inserted rather in front of the middle of the head; the basal joint short, not reaching the base of the head; second longest; third longer than the fourth which is longer than the first: the anterior margin and the anterior-lateral margins of the pronotum elevated or reflexed, smooth, callous: scutellum elongate, much narrowed at the apex; frena extended to a distance beyond the middle of the scutellum: coriaceous portion of the hemelytra longer than the membrane which has nine longitudinal veins: venter slightly furrowed; the furrow from the orifices gradually amplified: feet rather long; basal and apical joints of the tarsi about equal (*Dallas*).

197. *AGÆUS TESSELLATUS*, Dallas.

Agæus tessellatus, Dallas, List Hem. i, p. 186, t. 6, f. 6 (1851); Walker, Cat. Het. i, p. 229 (1867).

♀. Above testaceous, thickly and finely punctured with brown: eyes pithy, ocelli red: pronotum with five brassy black spots on each side of the posterior portion of the disc; namely, three large ones near the middle, placed, two on the posterior margin, and one between the apices of these, a small one on the lateral margin near the lateral angle, and one between this and the three large spots: scutellum with the basal portion brassy black, with a narrow median line, the basal angles, the lateral margins, and an oblique angular line on each side testaceous; coriaceous portion of the hemelytra with a broad, brassy black transverse band about the middle, and an indistinct spot of the same colour towards the apex; membrane brown, semitransparent: wings blackish, with the base vermillion: dorsum of the abdomen bright red, shining; margins orange, with a brassy black spot on each suture: abdomen beneath testaceous, very faintly and sparingly punctured, with a row of round, dark brown spots on each side between the stigmata and the median furrow; stigmata black: pectus more or less thickly and finely punctured with brown; pectus impunctate; mesostethium with a slight median ridge: legs testaceous, with a streak on the apex of the femora, a similar streak near the base of the tibiæ, the apex of the tibiæ

and the tarsi, black; rostrum testaceous, with the apex black: antennæ black, with the underside of the basal joint testaceous (*Dallas*). Long, 21—22 mill.

Reported from India, Burma, Assam (mihi).

198. *AGÆUS MIMUS*, Distant.

Agæus mimus, Dist., Trans., Ent. Soc. p. 347. t. 12, f. 1 (1887).

Head fuscous; tylus (except apex and lateral margins) ochraceous; eyes greyish; antennæ black, second joint shorter than the third, 3-4 joints subequal in length; head rather thickly and finely punctate, excepting the lateral margins which are levigate: pronotum more coarsely and sparingly punctate, lateral margins levigate and finely crenulate anteriorly, lateral angles obtusely pointed and slightly produced; of a reddish ochraceous colour, with thirteen fuscous spots arranged six at base, of which two almost occupy the lateral angles and the intervening four are more or less triangular, five discal spots, of which the median is longest and intervenes between the two median basal spots and also between two large spots placed near the anterior margin: scutellum coarsely and rather closely punctate, fuscous, with a median longitudinal ochraceous line, and a similar line extending from each basal angle and meeting the median line on the disc: corium finely and sparingly punctate, reddish ochraceous with fuscous punctures and some irregularly shaped spots of the same colour, of which the most prominent are a claval streak, three discal (the lowermost largest), one large and long costal spot at about the middle, and three subapical spots (the median largest): membrane bronzy-brown: abdomen above reddish: head beneath ochraceous, margins of rostral canal, margins of bases of antennæ and a band from the same to the base of the head, fuscous: prostethium fuscous, anterior and posterior margins and a transverse discal line ochraceous; lateral margins and a spot near the coxæ, reddish: meso- and meta-stethium fuscous, their margins and the odoriferous apertures ochraceous, and with reddish spots near the bases of the coxæ: abdomen beneath with a median, longitudinal, furrow, reddish ochraceous, ornamented with a number of large dark fuscous spots: legs fuscous, femora streaked with ochraceous (*Dist.*). Long, 23; exp. angl. pron. 10 mill.

Reported from Assam, Sibságar (mihi).

Genus *EURYDEMA*, Laporte.

Pentatoma, subg. *Eurydema*, pt., Lap. Ess. Hém. p. 61 (1832); Herr. Schöff. Nom. Ent. i, p. 37 (1835); *Eurydema*, pt., Am. and Serv. Hist. Nat. Ins. Hém. p. 125 (1843); Kolenati, Melet. Ent. iv, p. 21 (1846): *Strachia*, pt., Dallas, List Hem.

i, p. 257 (1851); Fieb. Eur. Hem. p. 343 (1861); Walker, Cat. Het. i, p. 313 (1867): *Eurydema*, Stål, Ofvers. K. V.-A. Förh. xxix, 3, p. 39 (1872); En. Hem. v, p. 60, 85 (1876).

Stål thus distinguishes between the allied genera:—

1—2. Eyes sessile: anterior and antero-lateral margins of pronotum, elevated, callous:—*Eurydema*, Lap.

2—1. Eyes briefly stylate.

3—4. Pronotum sinuate at the apex, anterior margin callous:—*Stenozygum*, Fieb.

4—3. Pronotum somewhat truncate at the apex; anterior margin not callous:—*Bagrada*, Stål.

199. EURYDEMA FESTIVUM, Linnæus.

Cimex festivus, Linn., Syst. Nat. ii, p. 723 (1767).

Pentatoma picta, Herr. Schöff. Cont. Panz. Faun. Germ. p. 116 (1835).

Eurydema pictum, Herr. Schöff. Nom. Ent. i, p. 55, 91 (1835),

Strachia picta, Hahn, Wanz. Ins. iii, p. 14, t. 77, f. 240 (1835); Fieb. Eur. Hem. p. 343 (1861); P. Löw, Wien, Ent. Zeit. ii, p. 57 (1883).

Cimex fallax, Scholtz, Prodr., p. 154 (1846).

Var. *albiventris*, Jakov., Bull. Soc. Mosc. li (3) p. 105 (1876).

Var. *cruentatum*, Puton, Hém. Het. France, ii, p. 70 (1880).

Eurydema festivum, Distant, Scient. Res. Sec. Yarkand Miss. p. 6 (1879); Reuter, Ent. Tijds. i, p. 130 (1880); Rev. d'Ent. iii, p. 68 (1884); Berlin Ent. Zeit. xxix, p. 40 (1885).

Reuter (l. c.) establishes the fact that *Cimex festivus*, Linn., is not the species of that name as used by later authors, but is *E. pictum*, H. S. hence arises some difficulty in arranging the synonymy. Through the kindness of M. Lethierry, I have received a specimen of *E. festivum*, from Amasia in Asia Minor, which agrees in all respects with Hahn's figure of *S. picta* which is described by him as having 'the antennæ black; head reddish or yellowish, anteriorly with two spots, and from the eyes hindwards, black-green: above punctured; pronotum yellowish, reddish on the border; anteriorly with two transverse spots, and, behind them, a transverse row of four almost quadrate spots, black-green: scutellum yellowish, reddish at the apex, black-green at the base: hemelytra reddish or yellowish, each with a hook-shaped black-green marking, behind which, as also on the outer margin, is a black-green spot: abdomen beneath yellowish or reddish; on the outer margin on each side, a small black-blue point on each incisure: wings black-green with whitish limbus: feet yellowish, ringed and streaked black-green.' Long, $10\frac{1}{2}$; broad, $5\frac{1}{4}$ mill.

Reported from Europe, Yarkand, Sind valley, and probably Sikkim.

200. EURYDEMA DOMINULUM, Scopoli.

Cimex dominulus, Scop., Ent. Carn., p. 124 (1763).

Cimex festivus, Fabr. Syst. Ent. p. 714 (1775); Spec. Ins. ii, p. 358 (1781); Mant. Ins. ii, p. 295 (1787); Ent. Syst. iv, p. 118 (1794); Syst. Rhyng., p. 172 (1803); Gmelin, ed. Syst. Nat. i (4), p. 2150 (1793); Wolff, Ic. Cim. p. 61, t. 6, f. 58 (1801).

Strachia festiva, Hahn, Wanz. Ins. i, p. 181, t. 29, f. 93 (1831); Fieber, Eur. Hem. p. 342, (1861); Saunders, Trans. Ent. Soc., p. 124 (1875); ? L. Duda, Wien Ent. Zeit. iv, p. 70 (1885).

Var. *Eurydema bhesgica*, Kolen. Mel. Ent. iv, p. 28, t. 15, f. 31 (1846).

Eurydema dauricum, Motsch., Bull. Soc. Nat. Mosc. (2) p. 502 (1859); Stål, En. Hem. v, p. 86 (1876).

Eurydema dominulum, Reuter, Rev. d'Ent. iii, p. 68 (1884); Berlin, Ent. Zeit. xxix, p. 40 (1885).

♂. Head black; margin red; antennæ black, reddish at apex: pronotum red, with six black spots of which four posterior: scutellum red, with a black hemispherical patch at the base: hemelytra red; apex membranous, black; margin whitish, with two black spots at the internal margin, and a black dot at the apex: abdomen red with a black spot above on the apex, beneath on both sides with six ovate black spots: feet black. ♀ of the same colour, but a little larger (*Scopoli*). Long, $6\frac{1}{2}$ mill. Wolff's description is as follows;—'Head black, lateral margin red, impressly punctured, with a small impressed line, posteriorly bifid, on the apex; orbit of the fuscous eyes rufous: rostrum 4-jointed, black, shorter than half the body: pronotum declined anteriorly, red, shining, impressly punctured, with six black spots, the two anterior large, the four posterior smaller: scutellum red, impressly punctured, longer than half of the abdomen, with a black hemispherical patch at the base, and a small marginal spot on both sides before the apex: hemelytra red, impressly punctured, shining, interior margin, an abbreviated median band close to interior margin, spot at apex, and another in the middle of the exterior margin, black: membrane black, shining, margin broadly white: wings fuliginous, white at apex: abdomen above deep black, shining, margin red, immaculate: beneath rufous, deep black in the middle, very shining; a line of black dots on both sides: pectus deep black, very shining, with all the sutures livid: anus red: feet deep black; first tibiæ with a small tooth before the apex. Varies in size and in having six black ovate spots on each side beneath.' Long, 10 mill.

Reported from Europe, but is probably found in N. India, some of the specimens procured there being very like Wolff's figure but comparison with a long series can alone settle this question.

201. EURYDEMA WILKINSI, Distant.

Eurydema wilkinsi, (Ochs., in lit.) Dist. Trans. Ent. Soc. p. 123 (1879): Scient. Res. 2nd Yark. Miss. p. 5, f. 4 (1879).

Strachia conspicua, Jakov., Bull. Soc. Imp. Nat. Moscou, p. 286 (1881).

Pale luteous, somewhat thickly and coarsely punctured: head with the anterior part of the submarginal, lateral borders, and a large triangular marking at the base; pronotum with two large discal, subquadrate, linear markings, elongated exteriorly; scutellum with the base and two median forked lines, extending therefrom to about the middle, and spots on the lateral margins, a little before the apex; corium with two claval streaks, a linear spot on the middle of the outer margin, a transverse waved band, extending from the base of the membrane for two-thirds across the corium, and a rounded subapical spot, shining green. Abdomen above luteous, apical segment black, connexivum with a row of large green spots; underside of body. pale luteous: abdomen with a marginal row of spots situate on the outer edge of each segmental suture, and a submarginal row of transverse, slightly-waved linear markings, situate on the middle of each segment, greenish-black: sternum with some irregular markings of the same colour: legs pale luteous, streaked with greenish black, and femora obscurely annulated with the same colour near the apex: antennæ black, second joint about as long as 1 and 3 together, 4 somewhat dilated, about as long as 5: rostrum luteous, pitchy at base and apex. In most specimens, the markings on the pronotum are not perfectly subquadrate (*Dist.*). Long, 7 mill.

Reported from Yangi-hissar.

202. EURYDEMA ORNATUM, Linnæus.

Cimex ornatus, Linn., Faun. Suec. p. 251 (1761); Syst. Nat. ii, p. 723 (1767). Scopoli, Ent. Carn. p. 123 (1763); Wolff. Ic. Cim. p. 15, t. 2, f. 15 (1800).

Var. *Strachia herbacea*, Hahn, Wanz. Ins. iii, p. 13, t. 77, f. 239 (1835): *Eurydema festiva*, var. *herbacea*, Distant, Scien. Res. Sec. Yarkand Miss. p. 6 (1879).

Pentatoma ornata, var. *hoffmanseggi*, Gorski, Anal. ad Ent. p. 85 (1852) and var. *falleni*, Gorski, l. c.

Eurydema ornatum, var. *ventralis*, Kolen., Mel. Ent. iv, p. 26 (1846).

Strachia ornata, Duda, Wien. Ent. Zeit. ii; p. 70 (1884).

Eurydema ornatum, Reuter, Rev. d' Ent. iii, p. 68 (1884); Berlin Ent. Zeit. xxix, p. 40 (1885).

Ovate; varied black and red: head and wings black (*Linn.*). Varied black and red: head, antennæ, pronotum beneath, and feet, black: hemelytra with a free spot at the apex of the corium, a black subovate mark on the external margin towards the base; internal margin black and with two black spots, the lower of which is long and ob-

tuse; membrane blackish, margin whitish: two black semibifid spots on the pronotum: abdomen beneath red, in the middle with four transverse spots, on each side with a somewhat double row of black points, of which the one marginal with five somewhat conical points, the other interior, with six somewhat round points, with a brighter pupil in the middle (*Scop.*). Long, $8\frac{1}{2}$ mill.

Var. *herbacea*, Hahn:—Antennæ and feet black; the shining black-green head narrowly edged red anteriorly: above punctured, red: the anterior and posterior black-green markings on the pronotum united: on the inner margin of the hemelytra, a broad, black green-tinted, \perp -shaped mark turning outwards which is also produced inwards on to the scutellum, towards the apex, a black spot, and, on the outer margin, another somewhat larger: abdomen beneath red, black in the middle, black with a blue tint, and on each incisure, on each side, a small black-blue spot: wings brown with a greenish tint and whitish limbus. Long, $7\frac{1}{2}$ — $8\frac{1}{2}$; broad, 4— $4\frac{1}{2}$ mill.

Wolff's specimen is thus described:—

Head, antennæ, and rostrum, black; pronotum, scutellum, and hemelytra red, punctured: head punctured, submarginate at the apex, posteriorly with a bifid impressed small line; spot on both sides before the black eyes and the very slender margin, red; rostrum 4-jointed, red at base; antennæ 5-jointed; pronotum with a spot on both sides, posteriorly bifid, black: scutellum with spot at base not reaching margin, and one on both sides before the apex close to the spot on the hemelytra, black; a somewhat elevated small longitudinal line in the middle: hemelytra with a free spot at the apex, another larger at exterior margin towards the base, and a median spot confluent with the slender black limbus, black; membrane black, limbus whitish: margin of abdomen prominulous, red, with four black quadrate spots; beneath yellow-ferruginous with five marginal spots and the same number of elevated points, black: pectus concolorous, with small impressed, curved black lines: anus entire, blackish: feet black, femora at base and tibiæ annulated yellow-ferruginous (*Wolff*). Abdomen beneath sometimes red, with four transverse, black spots: pronotum sometimes with six black spots.

Reported from the Sind Valley.

203. EURYDEMA PULCHRUM, Westwood.

Pentatoma pulchra, Westw., Hope, Cat. Hem. i, p. 34 (1837). Java.

Strachia pulchra, Dallas, List Hem. i, p. 258 (1851); Walker, Cat. Het. iii, p. 332 (1868).

Eurydema sumatrana, Ellenr., Nat. Tijds. Ned. Ind. xxiv, p. 152, f. 20 (1862).

Eurydema pulchra, Stål, En. Hem. v, p. 86 (1876): Sign., B. S. E. F. (6 s.) i, p. xli (1881). China.

Fulvous: body somewhat depressed; head black, margin pale: spots on hemelytra cyaneous: abdomen beneath with median bands and round lateral spots (*Westw.*). Long, $8-8\frac{1}{2}$ mill.

Head black with a luteous limbus: pronotum orange red with six black spots, two transverse towards anterior margin, two obliquely ovate towards posterior margin, and two very minute punctiform spots at the posterior angle: scutellum orange red, spotted black, a single, very large, obtusely triangular, spot at the anterior margin, and two marginal rather oblong near the posterior angle: coriaceous portion of the hemelytra black, with a sigma-shaped band in the middle and the external margin, red; membrane black, chalybeous, margin hyaline at the apex: sternum luteous, spotted black at the stigmata: venter luteous, with a transverse band-shaped spot on each segment and two on the stigmata: femora lutescent, black at the apex; tarsi and antennæ, black (*Ellenr.*). Long, 9 mill.

Reported from Java, China, Sikkim where it is not uncommon (*mihi*).

204. EURYDEMA MULTIPUNCTATA, Distant.

Eurydema multipunctata, Dist., Trans. Ent. Soc. p. 348, t. 12, f. 6 (1887).

Body above pale ochraceous, sometimes suffused with purplish above: margins of tylus (angulated externally about the middle) and the base, black: antennæ ochraceous, apex of third and 4-5 joints palely infuscate, fourth joint longest: rostrum ochraceous, tip pitchy, reaching last coxæ; pronotum with twelve black spots, arranged four on anterior margin, remainder on the disc, three in each angular area and two in the middle: scutellum with ten black spots, four at the base, four near middle, and two before the apex: corium with three black spots, arranged somewhat longitudinally: membrane blackish, pale hyaline at apex and margins: body beneath pale ochraceous, head with two black spots at the base, sternum with a double submarginal row of black spots, a transverse black spot on each side of the metastethium, and a double row of black marginal spots on the abdomen (*Dist.*). Long, 8-9 mill.

Reported from Arrah (Bengal), rather rare (*mihi*).

Genus STENOZYGUM, Fieber.

Eur. Hem. p. 345 (1861); Stål, Ofvers. K. V.-A., Förh. 520 (1867); En. Hem. v, p. 61, 86 (1876). Includes *Nitilia*, subg. *Minodia*, Muls. and Rey, Pun. France Pent. p. 199 (1866).

Body short, oval, hairless, shining, somewhat convex, bright coloured: head not much deflexed, lateral margins rounded, slightly sinuate towards the base; antennæ robust, second joint shorter than the third

and only a little longer than the first; 4-5 joints robust, each one-third longer than the third: basal third of the scutellum not or but slightly elevated: apical angles of the abdominal segments without a spine, not, or but very slightly, prominent: last femora unarmed, not incrassate in ♂.

205. *STENOZYGUM SPECIOSUM*, Dallas.

Strachia speciosa, Dallas, List Hem. i, p. 261 (1851); Walker, Cat. Het. ii, p. 326 (1867).

Stenozygum speciosum, Stål, En. Hem. v, p. 86 (1879).

♀. Rather elongate, ovate: head, black, impunctate; each of the jugs with the inner margin yellow and an orange spot at the base; a large oblong orange yellow spot on the middle of the vertex, and a minute yellow dot on each side between this and the eyes, which are pitchy; ocelli red: pronotum black, divided in the middle by a deep, transverse, strongly punctured furrow; anterior portion smooth, shining, impunctate, with the broad lateral margins, a short line on each side on the anterior margin, and four spots across the disc, just in front of the transverse furrow, yellow; a small raised orange spot near each anterior angle surrounded by a depressed line; posterior portion irregularly punctured, with a broad, median, yellow, longitudinal band, expanded on the posterior margin (and probably continued on the anterior lobe), and a narrower band of the same colour on each side. Scutellum rather elongated, punctured; the base black, with a broad, median, longitudinal yellow line, and an orange spot in each angle; the posterior portion yellow, with a large red patch on the disc, at and behind which, the lateral margins are black; apex impunctate: corium black, punctured, with the disc smooth; with the outer margin broadly but interruptedly pale yellow; the two inner veins pale yellow, an orange spot on the disc before the middle, and a large irregular yellow patch tinged with red in the middle, at the apex; membrane dark brown, shining, somewhat brassy, with the margin hyaline: body beneath tawny, very smooth, shining: abdomen impunctate, with a row of spots on each lateral margin, a similar row on each side within the line of stigmata, and the stigmata themselves, black; the stigmata are seated in a reddish longitudinal line: pectus more or less punctured and spotted with black: femora pale yellow, striped with black, especially towards the apex; tibiae yellow, with the two black lines on the outside; tarsi blackish brown: rostrum pitchy black, with the base yellow: antennae black, with the second joint much shorter than the third, the basal joint yellow beneath (*Dallas*). Long, 7-8 mill.

Reported from N. India.

Genus BAGRADA, Stål.

Stettin Ent. Zeit., xxiii, p. 105 (1862); Ofvers. K. V.-A. Förh. xxix, 3, p. 39 (1872); En. Hem. v, p. 61, 88 (1876).

Body subobovate: head triangular; juga somewhat as long as the tylus, converging forwards, not contiguous, however, at the apex: eyes somewhat stylate: ocelli almost thrice as far from each other as from the eyes: second joint of antennæ longer than third: pronotum indistinctly sexangular, posterior angles very obtuse, broadly rounded, anterior margin not, or scarcely, elevated: tibiæ rounded; basal joint of last tarsi shorter than the two apical taken together (*Stål*).

Type *Cimex pictus*, Fabr.

206. BAGRADA PICTA, Fabricius.

Cimex pictus, Fabr., Syst. Ent. p. 715 (1775); Spec. Ins. ii, p. 359 (1781); Manb. Ins. ii, p. 296 (1787); Ent. Syst. iv, p. 122 (1794); Syst. Rhyng. p. 177 (1803); Wolff Ic. Cim. i, p. 17, t. 2, f. 17 (1800).

Strachia picta, Dallas, List Hem. i, p. 259 (1851); Walker, Cat. Het. ii, p. 326 (1867).

Bagrada picta, Stål, Stettin Ent. Zeit. xxiii, p. 105 (1862); En. Hem. v, p. 88 (1876); Lethierry, An. Mus. Gen. xviii, p. 743 (1883).

Antennæ black: head black, with lateral line and two very minute points on the vertex, rufescent: pronotum deep black, shining; anterior margin and lateral lines, and a median, palely ferruginous: scutellum deep black, with a longitudinal line and two small spots on each side, pale ferruginous: hemelytra smooth, margin pale, ending in a large ferruginous spot: wings fuscous, immaculate: beneath flavescent, with a lateral line and spots, black: feet pale with black lines (*Fabr.*). Antennæ, eyes and head, black; the latter shining, margined, emarginate at the apex, with a small line on both sides at the margin as far as the eyes, and two dots on the vertex, yellow-ferruginous: circumocular space, yellow: rostrum fuscous, 4-jointed, as long as half the body: pronotum deep black, shining, posteriorly impressly punctured; anterior and lateral margins and a median line, yellow ferruginous, and an anterior spot on each side, yellow: scutellum deep black with a median longitudinal line, and a spot on each side at base and apex, pale ferruginous: hemelytra deep black, impressly punctured, a pale line at the margin confluent with a ferruginous spot on the apex; apex itself black: wings blackish, immaculate: abdomen beneath flavescent, the margins of segments black, a line of black points on each side; pectus spotted rufous: feet pale, varied with small fuscous lines and dots (*Wolff.*). Varies in size, in the pronotum having no yellow spots, in scutellum with two dots, and the abdomen being black with yellow bands. Long, 8; broad, 4 mill.

Reported from N. India, Bengal, Bombay, Baghdad, Abyssinia. The Indian Museum has specimens from Calcutta (mihi), Hardwár (N.-W. Provinces).

Genus CIXIA, Stål.

Stettin Ent. Zeit. xxiii, p. 105 (1862); Ofvers. K. V.-A., Förh. p. 520 (1867); Walker, Cat. Het. ii, p. 326 (1867); Stål, En. Hem. v, p. 61, 87 (1876).

Head triangular; juga converging towards the apex, scarcely contiguous at the apex: eyes very briefly stylate: ocelli scarcely or only a little more distant from each other than from the eyes: antennæ long, basal joint extending beyond the apex of the head, second joint shorter than the third: basal joint of rostrum longer than the head: pronotum sex-angular, margins anteriorly and the anterior lateral, elevated: feet unarmed, tibiæ broadly sulcate above: basal joint of the last tarsi as long as the two apical joints taken together (*Stål*).

Type *Cimeæ limbatus*, Fabr.

207. CIXIA LIMBATA, Fabricius.

Cimeæ limbatus, Fabr. Syst. Rhynch. p. 176 (1803); Burm. Handb. Ent. ii, (i), p. 367 (1835); Herr. Schöff. Wanz. Ins. iv, p. 91, t. 138, f. 430 (1839).

Strachia limbata, Am. and Serv. Hist. Nat. Ins. Hém. p. 127 (1843); Dallas List Hem. i, p. 263 (1851); Walker, Cat. Het. ii, p. 326 (1867).

Cinxia limbata, Stål Hem. Fabr. i, p. 30 (1868); En. Hem. v, p. 87 (1876); pupa, Ellenrieder, Nat. Tidsskr. Ned. Ind. xxiv, p. 153, f. 22 (1862).

Above deep black: antennæ deep black: head with two abbreviated lines, rufous: pronotum punctured, with a median cross rufous and entire limb flavescens: margin of scutellum and a median line, rufous; hemelytra with a rufous median line which is posteriorly arcuate: wings black, whitish at the apex: body variegated (*Fabr.*). Above with antennæ black; two longitudinal lines on the head, margins of pronotum, a longitudinal line through the middle and a transverse line nearer the anterior margin and finer, lateral margins and a median longitudinal line on scutellum, on the hemelytra a broad line from the basal outer margin curved towards the inner angle of the apical margin and thence following the apical margin to the outer angle, two fine lines (one abbreviated) parallel to the inner margin, and two lines between the broad curved line and the external margin, ochreous: abdomen beneath ochreous with four oblong black spots on each side of the disc and a triangular spot at the apex, a spot on each segment towards the margin, three broader spots on each side of the pectus. Long, 13-16 mill.

Reported from Java, Silhat, Burma (mihi). The Indian Museum has specimens from Sumatra, Tavoy, and Harmatti in Assam.

Genus STRACHIA, Hahn, Stål.

Hahn, pt., Wanz. Ins. i, p. 180 (1831); Dallas, pt., List Hem. i, p. 262 (1851); Walker, Cat. Het. ii, p. 257 (1867); Stål, Stettin Ent. Zeit. xxiii, p. 105 (1862); Ofvers. K. V.-A. Förh. p. 520 (1867); En. Hem. v, p. 61, 87 (1876).

Head triangular; juga somewhat contiguous at the apex, eyes very briefly stylate: ocelli about twice as far from each other as from the eyes: antennæ 5-jointed, long; basal joint scarcely extending beyond the apex of the head, second joint a little shorter than the third: pronotum sexangular, anterior and anterior lateral margins reflexed, the latter sinuate: feet unarmed: femora, in ♂, incrassate; tibiæ above broadly sulcate, last tibiæ, in ♂, slightly curved; basal joint of the last tarsi shorter than the two apical taken together (*Stål*).

Type, *Strachia cruciger*, Hahn.

208. STRACHIA CRUCIGERA, Hahn.

Strachia cruciger, Hahn, Wanz. i, p. 184, t. 29, f. 95 (1831).

Strachia flammula, Ellenr. Nat. Tijds. v, Ned. Ind. xxiv, p. 153, f. 23 (1862).

Strachia crucigera, Dallas, List Hem. i, p. 262 (1851); Walker, Cat. Het. ii, p. 332 (1867); Stål, En. Hem. v, p. 87 (1876); Distant, J. A. S. B. xlvi, (2), p. 37 (1879); A. M. N. H. (5 s.) iii, p. 45 (1879).

Above black, punctured, shining: pronotum with a red and yellow cruciform mark; the red, yellow in the middle: sides and apex of the scutellum, black; the coriaceous portion of the hemelytra posteriorly, towards the end, with a yellow transverse band: the abdomen reddish yellow, spotted black on the sides beneath: all the femora black with above a narrow yellow, longitudinal streak.

Hahn describes an Indian specimen thus:—Head black, above with a blueish tinge: antennæ black, outwardly finely pilose: eyes brown-yellow, black in the middle: ocelli small, brown-yellow, shining: rostrum black, shining: pronotum narrowed forwards, with a transverse protuberance through the middle; both the outer corners produced in a sharp point; above, black, shining, with a red cruciform mark which turns into yellow posteriorly: pectus shining, black, with a white spot at each foot and near it a small red spot outwards: scutellum finely punctured, shining, red, yellow in the middle, black on the sides and at the apex: coriaceous portion of the hemelytra black, above on the inner margin, and beneath on the outer margin, a white longish line, then, before the end, a red yellow transverse band; membrane brownish, lighter at the tip, reaching beyond the abdomen which is above yellow-red, shining; each incisure on the outer margin with a narrow black streak: beneath yellow-red, black in the middle, and each segment with a black puncture on the margin: feet and tarsi are glossy black, and each femur is marked above by a narrow yellow longitudinal line.

Var. *a.* Scutellum black with a longitudinal red streak, yellow in the middle, and above, in each corner, a red spot. Long, $7\frac{1}{2}$; broad almost $4\frac{1}{2}$ mill.

Reported from Java, Sumatra, Tenasserim, Assam (mihi). The Indian Museum has specimens from Tenasserim.

Species of doubtful position.

209. *STRACHIA AFFLICTA*, Walker, Cat. Het. ii, p. 332 (1867).

Dark-green, broad, elliptical, shining, thinly and roughly punctured, tawny beneath: head broad, partly tawny along the borders; sides reflexed; juga and tylus of equal length: rostrum tawny, extending to the hind coxæ; antennæ black, slender; and 2 joints tawny; first extending almost to the front of the head; second much shorter than the third, which is tawny at the base: pronotum with slightly reflexed sides; fore angles slightly acute; hind angles much rounded: scutellum long, rounded and rather broad at the tip: abdomen above tawny: legs tawny, rather stout; tibiæ setulose, furrowed: hemelytra with a brownish membrane: wings cinereous (*Walker*). Body long, $14\frac{1}{2}$ —15 mill.

Reported from India.

210. *STRACHIA INORNATA*, Walker, Cat. Het. ii, p. 331 (1867).

Black, elliptical, smooth, shining, here and there coarsely punctured, testaceous beneath: head with a large testaceous spot on the hind border; sides reflexed; juga and tylus of equal length: rostrum black, extending to the hind coxæ, testaceous at the base: pronotum with a well defined transverse furrow, with a testaceous spot on the fore part of each side, and with a testaceous stripe which is dilated on the fore border and more so on the hind border; angles much rounded: scutellum with a testaceous spot on each side, and with a testaceous stripe: pectus and abdomen beneath with a broad black stripe on each side: legs black, stout; femora towards the base and coxæ testaceous: hemelytra with a testaceous costal dot near the base and with two testaceous spots in the disc; first spot before the middle; second behind the middle, larger than the first; membrane cinereous (*Walker*). Body long, 7 — $7\frac{1}{2}$ mill.

Reported from India.

211. *STRACHIA STRANGULATA*, Walker, Cat. Het. ii, p. 344 (1867).

Aeneous-black, elongate-elliptical, shining, thinly and roughly punctured: head smooth; sides slightly reflexed; juga contiguous beyond the tylus: eyes prominent: rostrum black, extending to the

hind coxæ: antennæ black, more than half the length of the body; first joint broad, extending to the front of the head; second as long as the third; fourth longer than the third; fifth shorter than the fourth: pronotum much narrower in front of the transverse furrow, with a pale yellow stripe, which is broadest on the fore border; a nearly round callus on each side in front; sides and fore border pale testaceous, slightly reflexed: scutellum with a pale yellow stripe, which is abbreviated hindward and has a red patch at each side of it at its base, and at its tip: pectus whitish about the coxæ: abdomen beneath with an irregular yellow stripe on each side: legs long; femora slightly incrassated: hemelytra with a white transverse streak, joining the exterior border near the angle of the corium; membrane black, with a whitish pellucid border (*Walker*). Body long, 9—9½ mill.

Reported from Penang: closely allied to *S. bicolor*, Dallas.

212. *STRACHIA LITURIFERA*, Walker, Cat. Het. ii, p. 326 (1867).

Blueish-black, elongate-oval, shining, roughly punctured, pale luteous beneath: head with a red spot on each side in front of the eye; sides pale luteous, slightly reflexed; juga and tylus of equal length; a black patch on each side beneath: rostrum black, pale luteous at the base, extending to the hind coxæ: antennæ black, about half the length of the body; first joint extending nearly to the front; second much longer than the third; fourth as long as the second, shorter than the fifth: pronotum red, with six elongated blueish black spots; of which two are transverse and on the fore border, and the other four are oblique; hind angles rounded: scutellum extending to the angle of the corium; a red stripe extending along half the length from the tip; sides red for half the length from the base: pectus on each side with three red spots, which are irregularly bordered with blackish blue; sides red: abdomen beneath red, and with blackish blue spots along each side; connexivum red, with blackish blue spots: legs black, streaked with pale luteous: hemelytra with two irregular red spots; costa towards the base and exterior border, red; first spot joining the red part of the costa; second joining the red of the exterior border; a whitish costal streak beyond the middle: membrane black, with a whitish pellucid border.

Var.—Thorax with the spots much diminished in size; the red line more prevalent in the hemelytra (*Walker*). Body long, 7—7½ mill.

Reported from N. India.

213. *STRACHIA DESIGNATA*, Walker, Cat. Het. ii, p. 327 (1867).

Black, elongate-oval, shining, roughly and thinly punctured, pale testaceous beneath: head in front with pale reflexed testaceous borders;

juga extending much beyond the tylus; rostrum black, extending to the hind coxæ; antennæ black, about half the length of the body; first joint not extending to the front of the head; second much longer than the third; fourth a little longer than the second: pronotum with a testaceous border, a slender testaceous stripe, and a semicircular testaceous line which rests on the hind border and emits a branch to each side near the fore border: scutellum bordered with testaceous on each side and at the tip, which is narrow; fore part more convex than the hind part, not punctured, but transversely and very finely striated: pectus and abdomen beneath with two stripes of large black spots: abdomen beneath with a middle stripe of transversely elongated black spots: legs black; femora towards the base and coxæ testaceous; posterior tibiæ with a testaceous band: hemelytra with a testaceous stripe which proceeds on the costa from the base, and diverges to the disc and returns to the costa, and there again diverges and joins the exterior border, which is also testaceous; membrane black, with a whitish border (*Walker*). Body long, 8—8½ mill.

Reported from India.

214. *STRACHIA SECURIGERA*, Walker, Cat. Het. ii, p. 334 (1867).

Ochraceous, oval, shining, roughly and thinly punctured, pale yellow beneath: head transversely and finely striated, irregularly black along the hind border; sides slightly reflexed; tylus hardly extending beyond the juga; rostrum black towards the tip, extending rather behind the hind coxæ: antennæ black, slender, full half the length of the body; joints from the first to the fourth successively increasing in length; first luteous, extending to the front of the head; fifth a little shorter than the fourth: pronotum reflexed on each side along the fore border, with two abbreviated black bands; fore band containing a pale yellow callus on each side; hind band slightly interrupted, occasionally thrice interrupted; hind angles rounded: scutellum black, with a luteous transverse, very large, cyathiform mark; tip rather broad, bordered with pale yellow: pectus and underside of abdomen with four stripes of transverse black spots, the latter with a median stripe of large black spots: legs stout; tibiæ towards the tips and tarsi piceous: hemelytra with two black stripes; first stripe subcostal, excavated on the inner side, commencing at one-sixth of the length and extending nearly to the tip, contiguous to the second at its base; second much contracted in the middle, commencing very near the base, not extending beyond the angle of the corium; membrane blackish (*Walker*). Body long, 9—9½ mill.

Reported from Mysol, Burma.

215. *STRACHIA PLATYSPILA*, Walker, Cat. Het. ii, p. 337 (1867).

Grass-green, broad, oval, shining, thinly and roughly punctured: head slightly ochraceous-tinged, transversely and finely striated on each side; three black spots on the hind border, the middle one much larger than the other two; sides slightly reflexed; tylus extending a little beyond the juga: rostrum black, green at the base, extending to the hind coxæ: pronotum with an ochraceous patch on the fore part of the disc, and one on each hind angle; six elongated black spots; two transverse in front, four between the hind angles, which are much rounded: scutellum with two large transverse black spots, on the fore border, and with posterior elongated much larger black spots, which are nearly contiguous; tip rather broad; pectus and under side of abdomen with five stripes of large black spots: legs moderately long and slender; femora with some black dots: hemelytra with three very large black spots; apical half of the corium ochraceous; membrane blackish, with a broad pellucid border (*Walker*). Long, $9\frac{1}{2}$ mill.

Reported from Penang, Tenasserim.

216. *STRACHIA PARDALIS*, Walker, Cat. Het. ii, p. 330 (1867).

Bright orange-red or luteous, broad, oval, shining, thinly and roughly punctured, pale yellow or white beneath: head transversely and very finely striated, with three black spots, which are connected with the black line along the hind border; an elongated black spot on the tylus, which extends somewhat beyond the juga; sides slightly reflexed: rostrum black towards the tip, extending to the hind coxæ: antennæ piceous, more than half the length of the body; first and second joints bright red; first not extending to the front of the head; third bright red towards the base, nearly twice the length of the second; fourth a little longer than the third and a little shorter than the fifth: pronotum with six elongated black spots, which are partly bordered with pale yellow or wholly bordered with white; first and second spots transverse on the fore border; the other four near the hind border; a black dot on each hind angle, which is rounded; sides slightly reflexed; pale yellow or white in front: scutellum broad and pale yellow or white at the tip; a curved red band, pale yellow on each side where it joins the fore border, sometimes wholly white; a slender red stripe, pale yellow towards the tip or wholly white: pectus with six stripes of quadrate black spots: abdomen above black with pale yellow spots on the connexivum under side with two rows of large black spots on each side, a black dot on the second segment, an abbreviated black band, which is excavated on the hind border on the third segment, and another on the fourth, a large black spot on the fifth, and a transverse smaller one on

the sixth: legs bright red, stout: hemelytra with three large black spots; a lanceolate black streak on the hind border; membrane brown, with a pellucid border (*Walker*). Body long, $9-9\frac{1}{2}$ mill.

Reported from Bouru, Hong-Kong, Siam, India.

217. *STRACHIA VELATA*, Walker, Cat. Het. ii, p. 329 (1867).

Orange, oval, shining, thinly punctured, pale yellow beneath: head smooth; sides slightly reflexed; juga and tylus of equal length: rostrum pale yellow, extending to the hind coxæ, tip black: antennæ black, a little more than half the length of the body; first joint orange, not extending to the front; second shorter than the third; fourth much longer than the third, as long as the fifth: pronotum with eight elongated cinereous-green spots; two transverse on the fore border; the other six forming a band between the hind angles, which are much rounded: scutellum which is rather broad and extends beyond the angle of the corium, pale yellow towards the tip; four large elongated cinereous-green spots; two transverse on the fore border; two lanceolate: pectus and underside of abdomen with two rows of green dots: legs pale green; tips of the femora ochraceous; tarsi and tips of the tibiæ tawny: hemelytra with a cinereous-green subcostal streak, and with three large cinereous-green spots, the third joining the streak; membrane brown (*Walker*). Body long, $9\frac{1}{2}$ mill.

Reported from N. India. Like *S. varia*, in structure.

218. *STRACHIA HETEROSPILA*, Walker, Cat. Het., iii, p. 331 (1867).

Ochraceous, oval, broad, stout, shining, coarsely and thinly punctured; beneath pale yellow: head with three black spots on the posterior margin, a black dot in front on the tylus which extends a little beyond the juga; sides slightly reflexed; rostrum black, ochraceous at the base, extending a little beyond the last coxæ; antennæ black, slender, 1-2 joints ochraceous, first not reaching the front of the head, third very much longer than the second, ochraceous at the base: pronotum with four large black spots on the posterior margin, space in front on each side smooth, pale yellow, including a narrow transverse black spot; angles much rounded: the intermediate black spots of the pronotum continued on each side of the base of the scutellum which has also two very broad black streaks converging hindwards, apex broad, rounded; two rows of black spots on each side of the pectus: abdomen beneath with two submarginal rows of black spots: hemelytra with a broad black streak extending along the posterior margin and curved inward at the apex, and a large black costal spot: membrane black, bordered pale cinereous (*Walker*). Long, $8\frac{1}{2}$ mill.

Reported from Siam.

Div. HOPLISTODERARIA.

Stål, *En. Hem.* v. p. 61 (1876).

a.—Entire orifices margined; or auriculately margined; or, generally, extended in a margined furrow, closed at the apex, or in a continuous ridge: venter generally tuberculated at the base or spinose.

b.—Anterior lateral margins of pronotum entire, unarmed, generally distinctly reflexed, or narrowly elevated and callous, rarely obtusely rounded.

c.—Mesostethium with a ridge generally slightly, or not so highly, elevated, everywhere equally high: this ridge rarely entirely, or anteriorly strongly, elevated and compressed, and, very rarely, freely produced between the first pair of coxæ, and, if so, then either the tibiæ are sulcated above, or broadly flat and margined, or the venter is furnished at the base with a freely porrect spine, or the ridge itself is deeply sulcated, or the punctures on the head are arranged in longitudinal rows: apical angles of sixth abdominal segment very rarely produced in a large acute tooth; sixth ventral segment, in ♀, obtusely and not so deeply sinuated at the apex.

d.—Lateral angles of the pronotum produced in a spine or acuminate process, or sinuated at the apex, anterior lateral margins very obtuse, rounded, convex: pronotum anteriorly levigate, or sparingly punctured; within the sometimes callous anterior margin, furnished with a row of punctures, generally regular: entire bucculæ rather elevated, often higher posteriorly, abruptly elevated and sometimes somewhat lobate posteriorly, there not gradually lower and evanescent: scutellum broad behind the frena which do not extend beyond the middle of the scutellum: venter neither ridged nor furrowed, second segment without a spine or tubercle in the middle; second joint of the rostrum not longer than the two apical joints taken together, generally short: furrow of the orifices elongate, varying in length: scutellum levigate on the basal angles, or marked by a pale, levigate, callous spot: pronotum anteriorly and the head strongly declined, sometimes perpendicularly: feet pale, not sprinkled black, rarely streaked with black: punctures on the head arranged in simple, parallel, longitudinal rows.

Genus ALCIMUS, Dallas.

List Hem. i, p. 218 (1851); Stål, *Ofvers.*, K. V.-A., Förh., p. 511 (1867); *En. Hem.* v. p. 61, 88 (1876).

Head short, somewhat triangular, rather broader across the eyes than its length, with the lateral margins strongly indented before the eyes; the tylus passing the juga, making the head rather pointed in

front: eyes prominent, semiglobose, truncated posteriorly in a straight line; ocelli minute, flat, placed close to the eyes: antennæ about as long as the head and pronotum, rather slender, of five joints; basal joint short and stout, not reaching the apex of the head; second joint shorter than the third, about equal to the fifth; third joint longest; fourth longer than the second; antenniferous tubercles very prominent: rostrum reaching the posterior coxæ, inserted about the middle of the head; basal joint reaching the anterior coxæ; second joint longest, as long as the 3 and 4 together; 3 and 4 about equal, nearly as long as the first: body broad, rather flat above; pronotum anteriorly and the head rather perpendicularly inclined; the lateral horns of the pronotum curved upwards and a little hindwards, acute at the apex, with a small tooth on the anterior margin at a short distance from the apex, and with seven furrows, namely, two on the upper surface, three on the lower, one on the anterior and one on the posterior margin: scutellum very long, nearly reaching the apex of the body, not much narrowed towards the apex, and with the lateral margins straight; frena short; mesostethium furrowed: coriaceous portion of the hemelytra with the inner margin very short, not reaching beyond the fourth part of the length of the scutellum; the apical margin, on the contrary, very long, produced along the margin of the scutellum to within about one-fourth of its length from the apex, then suddenly rounded off; membrane with longitudinal veins: base of the abdomen and sternum unarmed: legs moderate; femora tumescent beneath towards the apex; tibiæ above distinctly furrowed; tarsi 3-jointed; second joint shortest; apical joint as long as the first and second together (*Dallas*).

219. *ALCIMUS CORONATUS*, Stål.

Alcimus coronatus, Stål, *En. Hem.* v, p. 88 (1876).

♀. Pale flavescent, above obscure and rather densely sprinkled with black punctures which are also cinctured black: lateral horns of pronotum levigate, margined anteriorly by a fine wrinkle or ridge, abbreviated near the apex: head punctulate, with subbasal spot and angulated line beginning at the eyes and produced towards the apex, testaceous: pronotum marked with a smooth anterior band, posteriorly branched, flavescent, punctured within the black anterior margin: scutellum sprinkled yellow, marked at the basal angles with a levigate, flavescent spot: pectus punctured here and there, adorned anteriorly with a smooth, flavescent spot: venter smooth, adorned with a streak which is contracted in the middle of the segments, also with black lateral bands which are punctured: feet streaked with black; antennæ

testaceous, obscure towards the apex (*Stål*). Long, 8; broad, $5\frac{1}{2}$; exp. com. pron., 10 mill.

Reported from the Deccan.

220. *ALCIMUS FLAVICORNIS*, Distant.

Alcimus flavicornis, Dist., Trans. Ent. Soc. p. 349 (1887).

Head black, with three median lines on anterior half, a linear spot near the base, and a similar spot in front of each eye, yellow; antennæ fuscous-brown, 2-3 joints subequal in length and longest, fourth shorter than the third and longer than the fifth: rostrum dark castaneous, extending beyond the last coxæ: pronotum very dark obscure ochraceous, thickly covered with coarse, dark punctures, anterior fourth black, with five yellow spots, situate one on each lateral margin, and three median angulated spots, two near anterior margin and one between and behind them, apical angles widely produced laterally and upwardly, their apical thirds yellow, extreme apices black: scutellum and corium dark obscure ochraceous, darkly and coarsely punctate, irrorated with levigate yellow markings, and the scutellum with two large, yellow, levigate spots near the basal angles: membrane fuscous, apex paler: head and prostethium beneath as above, with two fused yellow spots on each side of the eyes, the apices of the pronotal angles yellow as above: meso- and meta-stethium and abdomen beneath, ochraceous; the sutures, a row of sublateral streaks and a median longitudinal band to abdomen, blackish: legs dark castaneous; femora more or less streaked yellowish (*Dist.*). Long, 8-9; exp. angl. pron., 10-12 mill.

Reported from Sikkim (mihi).

Genus HOPLISTODERA, Westwood.

Hope, Cat. Hem. i, p. 18 (1837); Dallas, List Hem. i, p. 194 (1851): Walker, Cat. Het. ii, p. 265 (1867): Stål, Ofvers. K. V.-A. Förh., p. 510 (1867): En. Hem. v, p. 62, 88 (1876).

Body short, stout; usually as long as broad: head smooth, not punctured, unless at the base: pronotum sparingly punctured, inclined anteriorly, levigate, punctured within the lateral margin, spine of the lateral angles stout, acuminate: scutellum broad behind the frena which are short, transversely convex, especially anteriorly, depressed, or somewhat so, at the frena, and furnished with a row of punctures; extending beyond the half of the body and rounded posteriorly: antennæ shorter than half the body, 5-jointed, first joint short, second and third joints equal, longer, the fourth and fifth joints equal, longer and stouter: corium and scutellum of equal length, or somewhat so; membrane with seven longitudinal veins: feet simple; tibiæ rounded.

221. HOPLISTODERA VIRESCENS, Dallas.

Hoplistodera virescens, Dallas, List, Hem. i, p. 217 (1851); Walker, Cat. Het. ii, p. 265 (1867); Stål, En. Hem. v, p. 89 (1876).

♂. Head orange yellow, brownish towards the vertex, which is sparingly punctured: pronotum very pale yellowish green, rather thickly punctured with brown, with two yellowish brown spots near the anterior margin; the lateral spines not very long, nearly horizontal, acute: scutellum testaceous, the basal portion very sparingly, the apical more closely, punctured with brown; the base with four brown spots: hemelytra pale yellowish green, rather finely and not thickly punctured with brown; membrane transparent: abdomen beneath pale greenish yellow, rather thickly punctured, the punctures brown on each side of the disc, on the middle of the last segment, and on the anal plate: pectus pale yellow, punctured with brown: legs pale yellow, with the apices of the tibiæ and the basal joints of the tarsi brownish: rostrum yellow, with the tip black: antennæ yellow, with the two apical joints fulvous (*Dallas*). Long, 9-10 mill.

Reported from N. India.

222. HOPLISTODERA INCISA, Distant.

Hoplistodera incisa, Dist., Trans. Ent. Soc. p. 349, t. 12, f. 3 (1887).

Allied to *H. testacea*, Westw. Ochraceous with brownish tints: head finely and sparingly punctate: antennæ ochraceous, becoming darker towards the apex: pronotum sparingly but coarsely punctate, the lateral angles produced into robust, subacute spines, the apices very slightly reflexed hindwards, and with a notched tubercle beneath at about half their length: scutellum with the basal half very sparingly but coarsely punctate, the apical half thickly punctate: corium coarsely and irregularly punctate: membrane pale hyaline: body beneath ochraceous, with a sublateral row of castaneous spots on each side: legs pale luteous; femora annulated brown near the apex: rostrum ochraceous, apex pitchy and extending a little beyond the last coxæ: 2-3 joints antennæ subequal in length, apical joint longest (*Dist.*). Long, 8; exp. angl. pron., 9 mill.

Reported from Mungphu (Sikkim), Assam (mihi).

Genus BOLACA, Walker.

Cat. Het. ii, p. 251 (1867).

Body elongate-elliptical, rather flat, thickly and minutely punctured: head lanceolate, much shorter than the pronotum; juga extending much beyond the tylus, slightly notched on the outer side, terminating

in two spines: eyes not prominent: rostrum slender, extending to the hind coxæ: antennæ slender, about half the length of the body; joints successively increasing in length: first not extending to the apex of the head: pronotum with a small oblong ringlet on each side in front, connected by a streak with the margin, which is slightly crenulated; anterior angles prominent; hind angles rectangular, slightly prominent: scutellum attenuated towards the tip, extending rather beyond the angle of the corium: ventral segments slightly arched: legs slender, rather long; tarsi three jointed: membrane with five longitudinal veins, of which the subcostal one is forked (*Walker*).

223. BOLACA UNICOLOR, Walker.

Bolaca unicolor, Walker, Cat. Het. ii, p. 251 (1867).

Ferruginous, hardly pale, but more shining beneath: antennæ piceous towards the tips: membrane cinereous, with ferruginous veins. (*Walker*). Body long, $15\frac{1}{2}$ mill.

Reported from N. India.

Div. CATACANTHARIA.

En. Hem. v, p. 62 (1876).

a, b, c. as in Div. *Hoplistoderaria*, (p. 66).

d.—Lateral angles of pronotum rarely spinose, or produced in a long process, if so, the basal angles of the scutellum are without a levigate spot; or the venter is spinose, or tuberculated at the base, or furnished with a broad, obtuse, rounded ridge, anteriorly furrowed; or the black punctures on the head are arranged in simple and parallel longitudinal rows: frena, generally, extended behind the middle of the scutellum.

e.—Geniculæ, entire tarsi, or at the apex, generally, moreover, entire feet, or a great part, black: antennæ black, basal joint rarely flavescens: rostrum generally entirely, or almost entirely, black, very rarely with the greatest part, flavescens: entire membrane or the greatest part, black, or brassy black: margins of head, at least partly, usually reflexed: body generally large or moderate, usually yellow, pictured red and black.

Genus CATACANTHUS, Spinola.

Ess. p. 352 (1837): Am. & Serv. Hist. Nat. Ins. Hém., p. 141 (1843): Dallas, pt., List Hem. i, p. 196 (1851): Walker, pt., Cat. Het. ii, p. 351 (1867); Stål, Hem. Afric. i, p. 188 (1864); En. Hem. v, p. 62, 89 (1876).

Body ovate, beneath moderately convex: head proportionately small, flat, margins slightly elevated; jugs and tylus of equal length;

bucculæ reaching somewhat the base of the head, moderately elevated : antenniferous tubercles almost entirely visible from above, unarmed : eyes globose, sessile : antennæ 5-jointed, first joint extending slightly beyond the apex of the head : rostrum moderate, first joint somewhat on a level with the bucculæ posteriorly, second and third joints about equal : anterior margin of pronotum slightly elevated, anterior lateral margins acute, reflexed or foliaceously dilated : scutellum rather narrowed posteriorly, frena extended beyond the middle : membrane extending much beyond the apex of the abdomen, veins numerous, simple : mesostethium carinate : abdomen broader than the hemelytra, flattened out at the sides ; venter at the base unarmed, or spinose, or tuberculate : feet somewhat long, tibiæ distinctly sulcate above, first pair sometimes slightly dilated externally (*Stål*).

224. CATACANTHUS INCARNATUS, Drury.

Catacanthus incarnatus, Dallas, List Hem. i, p. 196, 270 (1851) ; Walker, Cat. Hem., ii, p. 351 (1867) ; Stål, Ofvers. K. V.-A., Förh., p. 632 (1870) ; En. Hem. v, p. 89 (1876) ; Distant, A. M. N. H. (5 s.) iii, p. 45 (1879), and xi, p. 169 (1883) ; J. A. S. B. xviii (2), p. 37 (1879).

Var. *a.* *Cimex incarnatus*, Drury, Ill., ii, p. 67, t. 36, f. 5 (1773) ; Thunberg, Nov. Ins. Spec., ii, p. 46 (1783) ; Stoll, Punaïses, p. 14, t. 2, f. 10 (1788).

Cimex nigripes, Fabricius, Syst. Ent. p. 710 (1775) ; Spec. Ins. ii, p. 353 (1781) ; Mant. Ins. ii, p. 291 (1787) ; Ent. Syst. iv, p. 106 (1794) ; Wolff, Ic. Cim. i, p. 11, f. 11 (1800).

Cimex melanopus, Gmelin, ed., Syst. Nat. i, (4) p. 2149 (1788).

Edessa nigripes, Fabr., Syst. Rhyng. p. 149 (1803).

Pentatoma nigripes, St. Farg. and Serv., Enc. Méth. x, p. 53 (1825).

Catacanthus incarnatus, Am. and Serv. Hist. Nat. Ins. Hém. p. 142 (1843).

Var. *b.* *Cimex aurantius*, Sulzer, Gesch. Ins. p. 96, t. 10, f. 10 (1776) ; Fabricius, Mant. Ins. ii, p. 290 (1787) ; Ent. Syst. iv, p. 105 (1794) ; Stoll, Punaïses, p. 29, t. 6, f. 39 (1788).

Edessa aurantia, Fabr., Syst. Rhyng. p. 149 (1803).

Cimex aurantius, Burm. Handb. Ent. ii, (i), p. 365 (1835).

Pentatoma aurantiacum, Blanch. Hist. Nat. Ins. iii, 29, Hem. t. 6, f. 4 (1840-41).

Catacanthus aurantius, Am. & Serv. Hist. Nat. Ins. Hem. p. 142 (1843).

Var. *a.* :—Large ; head, black, glabrous ; pronotum sanguineous, apex and margin blackish : scutellum large, rufous, deep black at the base, but the black colour does not reach the sides : hemelytra smooth, black, with a large reniform, sanguineous spot : wings deep black : beneath yellow with a cærulescent spot on the pectus : abdomen at the base and with a spot on each side of each segment, cærulescent : rostrum and feet, black (*C. nigripes*, Fabr.).

Above sanguineous ; head, narrow anterior margin of pronotum, antennæ and feet, shining black, more or less bronzed : two black spots

at the base of the scutellum; one similar spot, oblong and transverse on the disc of each hemelytrum: body beneath yellow with a black bronzed spot on each side of the mesostethium; a narrow band of the same colour at the base of the venter, and a row of five similar spots on each side: the abdominal point reaches only the insertion of the intermediate feet (*C. incarnatus*, Am. & Serv.). Long, 25—30 mill.

Var. *b.*:—Large; head with antennæ deep black; pronotum orange, with the anterior margin deep black: scutellum orange, immaculate: hemelytra orange with a median fuscous spot: wings fuscous: margin of abdomen variegated with orange and black: feet deep black (*C. aurantius*, Fabr.). Long, 25-30 mill.

Var. *c.*:—Scutellum, hemelytra and pectus immaculate. Ceylon.

Reported from Corea, Japan, Java, Sumatra, Borneo, Siam, Malacca, Singapore, Tenasserim, Ceylon, Madras, Bombay, Bengal, Pondicherry, Silhat, Assam. The Indian Museum has specimens from Tenasserim, Assam, Sikkim, Calcutta, Karachi, Malabar. Varies in colour from a sordid yellow, to orange and a bright maroon red, with and without the black spots.

II.—*A General Theorem on the Differential Equations of Trajectories.*

—By ASUTOSH MUKHOPADHYAY, M. A., F. R. A. S., F. R. S. E.

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- §. 2. Statement and demonstration of the theorem.
- §. 3. Application of the theorem to Mainardi's problem.
- §. 4. Other applications of the theorem.
- §. 5. Some applications of Conjugate Functions.

§. 1. *Introduction.*

In a paper on "The Differential Equation of a Trajectory," which was read at the last May meeting of the Society, (*Journal*, 1887, Vol. LVI, Part. II, pp. 117—120; *Proceedings*, 1887, p. 151), I pointed out that Mainardi's complicated solution (reproduced by Boole) of the problem of determining the oblique trajectory of a system of confocal ellipses, was equivalent to a pair of remarkably simple equations which admitted of an interesting geometrical interpretation. Believing, as I firmly did, that every simple mathematical result could be established by a correspondingly simple process, I naturally thought it worth while to re-examine the whole question, to see if the very artificial process of